Featuring Motor Transportation

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## THE GASOLINE MOTOR AND THE PERMANENT ROADWAY ARE THE FACTORS IN TRANSPORTATION

### They Are Supplementing the Services of the Steam and Electric Railway Systems Throughout the Country

### IN BOTH PASSENGER AND FREIGHT FIELDS

### A Discussion of Some of the Interesting Problems Which Are Being Faced as the Result of This Revolution in the Short Haul by the Bus and the Truck

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At the beginning of the present century the railways overshadowed all other agencies of transportation; during the first seventy or seventy-five years of their operation they attained a place of prominence surpassing the greatest anticipations. By this means distance has been shortened, distant markets have been opened, the exchange of products both manufactured and agricultural, has taken place over a wide area, and commodities which otherwise would not have moved beyond a few miles from their point of production because of their low value in proportion to weight or bulk have been carried to remote centres where they have been turned into highly productive goods. The building of a unified country across the stretch of 3,000 miles has been due in large part to the work done by the railways, bridging the gaps and permitting commerce to flow freely into and out of all parts of the country. In fact, the development of the country, especially in the west, has been to a considerabel extent preceded by the construction of the pioneer railways. In thinking of this growth of the country, we must not forget the waterways, which constitute a very important system of communication, extending for 1,300 miles between the Atlantic seaboard and the interior of the continent.

At first, the highways and waterways were the only means by which conveyance of traffic could take place; but with the introduction of the railway the interest in the two earlier systems of transportation declined; it was thought that the railway was destined to supersede the other agencies of transportation. While railway engineers have accomplished wonderful results in the years since 1830, when the first modern railway was opened, until lately no highway engineers have appeared since the days of Telford and Macadam, before the railway era. The names of these two men, who did so much for road building more than a century ago, have been perpetuated in a large proportion of the best highways of to-day. This is an indication of the extent to which highways have been neglected, while the railways have engaged the attention of the scientific men who have contributed to their advance.

**Enter, the Motor**

But in the last twenty years we have entered upon a period of precipitate change. The introduction of the motor vehicle has changed the outlook completely. The highways are no longer neglected. The use of the motor vehicle has made it necessary to have improved roads and the latter are being constructed to meet the needs of the traffic. The roads are coming into their own importance and are furnishing the elements of a new life for the country. The railways are no longer the sole agencies of rapid communication; they are compelled to share this honor with the motor vehicle.

An enterprising competitor with the railway has thus arisen and one of the important problems of the present time is, what is to be the relation of these two to each other. In the first flush of success of the motor vehicles, especially during the war, when they came into universal prominence as carriers of freight and passengers, it was thought by some that the railway was doomed and that its traffic would be almost entirely taken away by the newer carrier. But a more comprehensive and studied consideration of the problem has shown us that that first view must be revised. There are well defined limitations to the economical use of the motor vehicle, just as there are limitations to the profitable use of the railway facilities; and, while the motor vehicle is a competitor of the railway in certain respects, it is becoming increasingly evident that it can render its best service as a complementary ally, rather than a competitor, of the railway. In the history of transportation it has never been found that any agent which attained importance in this realm has passed out of operation; when new agents have come into the field they have always taken their appropriate place alongside of the existing means of transportation. Doubtless, the same will occur in regard to the motor vehicle and the railway. As we gain experience and knowledge we shall find the field which is most appropriate to the motor vehicle and shall confine it to that field in which it can render its best service. In the same way, we shall find that some work now done by the railway, but which cannot be done economically, may be relinquished to the motor vehicle, with good results to all concerned. So far as the railways are concerned, the problem is complicated by the fact that the status of the motor vehicle as a common carrier has not yet been fixed; it has not assumed fully its common-carrier responsibilities and is not subject to taxation and regulation commensurate with the privileges it enjoys in the use of the highways. Until it becomes definitely a common carrier the present unorganized operation of the motor vehicle cannot be satisfactorily co-ordinated with the railway service.

**Gas and Steam**

Along what lines, therefore, may we look most hopefully for the collaboration of the motor vehicle and the railway? Here it must be said that the motor industry is desirous of co-operating with the railway managements in such a way as will contribute to each department of transportation finding its proper place and thus most efficiently serving the public. It is not for the welfare of the industry to have its products employed in services for which they are entirely unsuited and such failures are derogatory to the whole trade. In what follows as to the co-ordination of the motor vehicle and the railway we have in mind those conditions under which the former has assumed the responsibilities of a common carrier and is subject to regulation in the same way as the railway.

1. The short-haul business of the railway has been recognized for some time as unprofitable. The traffic which moves only a short distance along the line cannot be charged a rate which will pay its proportion of the terminal and line expenses, the fixed charges, and the constant operating expenses. The terminal expenses alone are very heavy and they are the same whether the traffic moves ten miles or one hundred miles. When the railway cannot charge for this traffic a fully remunerative rate, discretion seems to point to the handling of it by motor truck. In that case, the traffic would not pass through the railway terminal nor be carried along the line. The trucks would collect the goods at the shipper's door and lay them down at the consignee's door. The many handlings which would be necessary if the goods went by the railway, with all

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## TRANSPORT REQUIRES TRUCKS AND TRAINS

### Former Replace Latter on Short Hauls and Rural Services But Both Are Essential

In a paper recently read by R. A. C. Henry, M.E.I.C., director of the Bureau of Economics, Canadian National Railways, before the Montreal branch of the Engineering Institute of Canada, emphasis was placed on the importance of efficient co-ordination between the various transportation facilities of the country.

A study of the subject indicates the function of the motor vehicle to be complementary to that of the steam and electric railway and not directly competitive. It appears that its most efficient and economic utilization is to be sought in the provision of short haul and urban services rather than of long hauls. Its field lies in the work of relieving congested terminals, hauling perishables in radial operations from large centres, and in providing facilities where no other is to be found.

It is worthy of note that the evolution of motor transportation has been so rapid that no consensus of public opinion has forced upon it state regulation as in the case of steam railways. With its increasing importance, however, it seems certain that some such action will be necessary in the near future.

Mr. Henry pointed out the difficutly of comparing the motor vehicles with the railways from the standpoint of economic serviceability to the community. There are features of each which are specially adapted to a particular need. The permanent way of the railroad represents a heavy capital expenditure. Fixed charges, moreover, along with maintenance costs impose on the railways an expenditure which the motor truck is not called upon to bear. It is obvious, at the same time, that a reasonable proportion of the cost of highway construction and maintenance should be imposed on the motor transport, by taxation or otherwise, before a fair and equitable comparison between the economics of steam and motor transportation can be made.

## One-Third of Gas Saved by High Grade Highways

According to the reported results of an investigation conducted by the Iowa State College in co-operation with the Bureau of Public Roads of the Department of Agriculture, automobiles consume approximately a third less gasoline when operated on improved roads than when operated on poor roads. The bureau estimates that the total daily travel of automobiles in this country is 300,000,000 miles.

## TAX ON GASOLINE MAIN CONTRIBUTOR TO NEW HIGHWAYS

### Despite Opposition New Impost Evidently Has Come To Stay

A tax on the consumption of gasoline seems to be one of the preferred methods of financing the construction and maintenance of highways these days—and it is a method which has called forth very strenuous opposition in some areas. A number of the provinces and most of the states have adopted a tax varying from one to four cents per gallon, while others have refused to adopt this method of financing.

In the province of British Columbia a gasoline tax of three cents has been in effect since the beginning of 1924, and during the period it has yielded an average of $32,000 per month. Prince Edward Island introduced a two cent tax last year. Manitoba adopted a tax of one cent per gallon two years ago, but this has been raised to three cents at the current session of the legislature. The province of Ontario has just introduced a bill providing for a three cent tax, and New Brunswick contemplates adopting a gas tax at the current session. Quebec has had a two cent tax since the beginning of 1924, and is now considering the advisability of raising this to four cents.

In some of the States also the gasoline tax has been a live issue of late, and extensive campaigns have been undertaken to popularize it with the motorists. In some of the States motor associations have favored such a means of raising funds so long as they were assured that the revenue would be earmarked for road improvement purposes. Nineteen of the States have had the tax for three years or more while eighteen others introduced it during 1923 or 1924. After a lively discussion of the advantages and disadvantages, New York State recently turned the proposal down.

**Advantages of the Gas Tax**

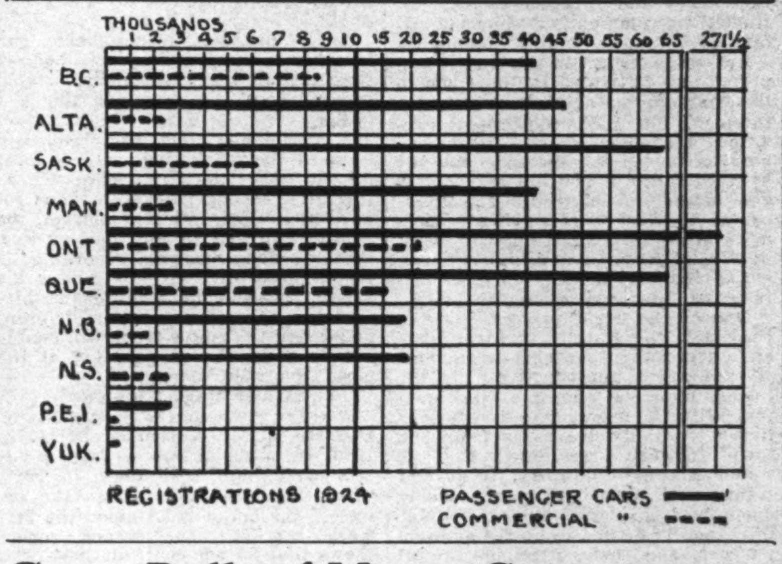
The outstanding features in favor of the gasoline tax are simplicity and ease of collection. Being collected virtually at the source, there is no expensive collection machinery necessary. Then, again, it is urged by advocates of the gasoline tax that it will ultimately mean a saving to the motorist since better roads will reduce the wear both of tires and of the automobile in general. It is put forward as the only sure way of developing a satisfactory system of highways with any dispatch. It is shown that this is especially neccessary in Canada to help develop the country and build up the population, by making the backward parts more accessible and more attractive. Ontario hopes to derive $3,000,000 annually from this source, and promises to make tremendous strides in road construction and improvement therewith. A further argument is that the gas tax is payable by visitors and tourists, and that this will provide a substantial part of the $3,000,000 which would otherwise be lost to the country.

**Opposition to the Tax**

The most strenuous opposition to the new impost was made by the Ontario Motor League on the alleged grounds that the motorists are already paying more than their share towards the upkeep of roads. The revenue of the province from motor vehicle fees last year was $4,756,000, and, on the same basis, should be $5.200,000 this year. Since the expenditure to be made by the provincial government on roads of all classes will be in the neighborhood of $10,000,000, the Motor League shows that the motorists' contribution already amounts to 52 per cent. of the total. A two cent tax is expected to yield $2,000,000. Add to this the registration fee and the total is $7,200,000, or 72 per cent. of the indicated total expenditure on roads. But the tax is three cents rather than two. This would mean that the motorists are paying 82 per cent. of the road costs. It was further urged that to expect city firms using a fleet of trucks which never go outside the city limits to contribute heavily towards the upkeep of country roads was decidedly unfair.

It cannot be disputed that there is validity in both sides of the argument, and the question must naturally be decided by each province or state separately on the basis of local conditions and requirements. In principle, the gasoline tax evidently has come to stay.

## AUTOMOBILES IN CANADA




## Great Bulk of Motor Car Sales Are Based on Credit

### Finance Companies Organized to Discount the Notes of the Dealers Received From Their Customers

The desire to own a motor car is well nigh universal. Year by year more families are transferring the automobile from the category of a luxury to that of a necessity. Many prospective purchasers, however, are unable to pay the full price in cash without an undue drain on their savings at the moment and desire to obtain extended payment privileges over a reasonable period. This, however, has been found a handicap to automobile dealers in their business activities. The dealer is unwilling, and, in many cases, unable to tie up his current assets, which could be used in his merchandising business, in the extension of credit to his customers.

In consequence of the situation outlined, the automobile dealer has found that the same principles must be applied to his business as are employed by any other well-conducted merchandising institution, and that he must obtain cash for his wares. He cannot be both a merchant and a banker. It would naturally be expected that the dealer would approach his bank for the requisite financing. Banking experience has shown, however, that such business is not particularly suited to the regular banking institutions as now constituted. The banks have not the machinery to carry on such business safely. It requires special selective machinery of a particular type. To meet this very definite need there have gradually developed a number of financial organizations which act as intermediaries between the banks and the automobile dealers—which, in brief, discount the note of the car purchaser which has been endorsed by the dealer, and then rediscount it with their bank after having affixed their own signature to the document.

**Not to Encourage Improper Buying**

It should be noted here that the underlying principle is not to encourage extravagance, or to induce those who cannot afford to purchase a car to do so. It is rather a facility to enable those who can afford to buy, to do so on terms that are reasonable and fair. A generation ago, building and loan societies operated extensively to provide the funds whereby a home might be purchased on a deferred payment plan, giving the purchaser a number of years to make the repayments. Thousands of salaried men who otherwise would have remained renters in this way became home-owners and thus better citizens. The man working on a salary or regular wages to-day is able to acquire a car for himself and his family on just the same plan that has prevailed in the matter of home buying for generations.

**Technique of Financing**

As indicated above, a number of companies have gradually developed to obtain credit from the banks and to pass it on to automobile dealers. There are now 35 of these companies operating in Canada, but the major portion of the business is carried on by the three largest. The finance companies obtain their line of credit from the banks by means of the three name paper mentioned above. Normally they may obtain about 3½ times the amount they put up themselves, and, in extreme cases, more. The finance companies retain the lien which is placed upon the car until fully paid for, as the banks do not regularly require possession of this document. The next step in the process is between the finance company and the dealer. The former accepts the note of the ultimate purchaser of the car, when the dealer has added his signature. More properly, he discounts it. The rates for this service vary, and it is impossible to set down any set rate.

Next comes the actual transaction of the ultimate buyer of the car. In nearly all cases it is specified that a cash payment of one-third be made upon taking possession of the car. The balance runs over a period of months, with a year as the maximum. The price of the car provides for the cost of the insurance until the final payments are made, and provision is also made against wrongful conversion.

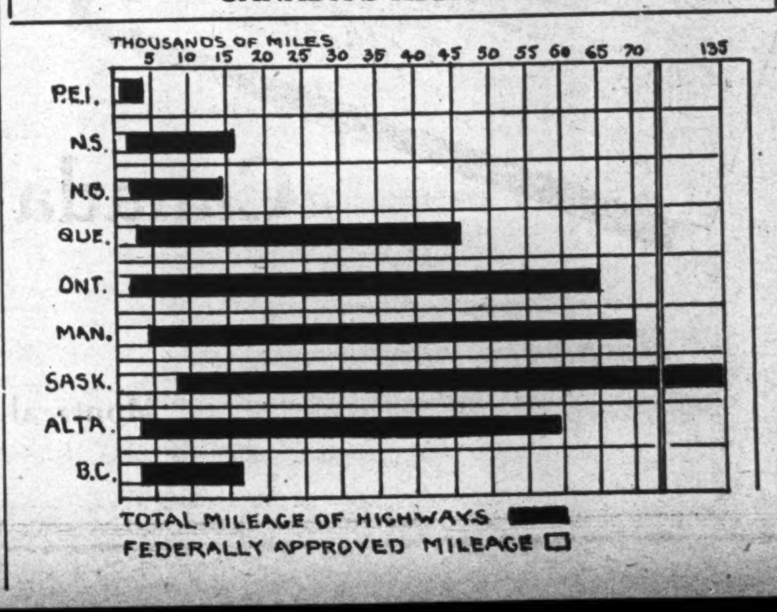
The purchase of automobiles on credit is more extensive in the United States than in Canada. It is conservatively estimated that 75 per cent. of all passenger cars and 90 per cent. of all trucks sold in the United States are sold on time. In Canada about 40 per cent. pay cash. In the States in 1922 the value of passenger cars sold was $2,070,000,000, and trucks, $277,000,000. Of this total of $2,347,000,000, the value of cars sold on time was $1,801,800,000. Assuming that the purchaser paid 1/3 down, there remained $1,201,200,000 credit to be provided. Assuming that the average transaction was outstanding for an average of six months, some $600,000,000 cash supplied by credit companies, banks, and dealers, was outstanding continuously to finance the business.

It is interesting to note that in this form of credit there is only one credit transaction. In other words the process is centralized. This is not the case with retail and manufacturing business, which is financed by a series of steps.

## Quebec Motor Upkeep $25,000,000 Annually

QUEBEC—Eighty-four thousand automobiles are now being operated by citizens of the province of Quebec, representing, at an average upkeep of $300 per year each, a total expenditure for maintenance alone of $25,000,000 in each 12 months, according to a statement made by the president of the Montreal Automobile Trade Association.

## CANADA'S HIGHWAYS




## MOTOR CAR HAS USHERED IN NEW ROADMAKING ERA

### Highway Financing Becomes Big Local Problem Throughout Canada

### SINKING FUNDS USED

### Principle Accepted That Motorists Should Provide Large Portion of Maintenance Costs

By H. M. CAMERON,
Statistical Editor, The Financial Post.

The first quarter of the century has seen tremendous strides in the evolution of Canada's highways. From a country of corduroy roads and a very limited mileage of such, we have evolved the highly efficient modern concrete highway. There is every evidence, moreover, that the next quarter century will witness greater changes in transportation than we have seen in the last. The advent of the motor car is responsible for a great part of the development to date. The successful entry of the automobile into every branch of transportation, both of freight and of passengers, is destined to mean a revolution in the present means and methods of transit. And the expansion and progress which Canada experiences will be due, in a large way, to the progress made in road construction.

One of the most obvious advantages to Canada of building an efficient chain of highways is the corresponding increase which bids well to take place in the tourist traffic of the country. It has been estimated that this traffic is worth upwards of $150,000,000 to the country annually. The Department of the Interior estimates that 7,370,000, or 48 per cent. of the automobiles in the United States, are owned by citizens living in states contiguous to the international border or waterways. There are, therefore, some 35,000,000 potential tourists to Canada in these states. This figure illustrates the tremendous importance of the development of highways, especially those running north and south. Both countries have main arteries like the Lincoln and the King Edward Highways running mostly east and west, but there is special need for roads connecting with the more northerly towns, and building up a north-and-south traffic. A well-developed system of this kind may be expected to build up the tourist industry into one of the most profitable we have, taking into account our admirable summer climate, and unequalled scenery. No municipality can afford to overlook this source of revenue and expansion.

**Aids Settlement Also**

Of paramount importance also is the question of attracting settlers to the country parts, and of making farm life more attractive, and the various farming sections more accessible. Farm life to-day differs radically from that of a decade or a generation ago. Our grandfathers hauled their grain 20 or 30 miles to the railway, and it is little wonder that the younger generation deserted the farms. To-day the farmer takes his grain into town over a fine highway.

The building of roads is one of the most important factors in settling the unoccupied tracts of land across Canada, as well as in keeping them settled. At the same time it is one of the big factors in the appreciation in the value of farm lands. As land in any section becomes more valuable, the municipality naturally has less difficulty in its problems of financing. In other words, the funds which are expended on road construction today are soon taken out of the same municipality in the form of increased revenue.

What has been said does not imply that a municipality can go ahead and spend money regardlessly. The financing of new roads is a difficult problem, and the simple plan of borrowing the entire amount required has involved many municipalities in heavy debts. It is generally recognized that a large proportion of the funds should be derived from current taxes, and this is the policy generally followed to-day. Usually it is conceded that the motorist should make a substantial contribution. At the same time there are other road users as well as motorists. Property owners and the entire community make use of the roads as well as reaping the benefit of appreciated land values and so on. The cost of road construction should, therefore, be distributed in some equitable fashion according to the benefits received. The experience and practice of two or three of the provinces will serve to throw some light on methods of financing now in vogue.

**Methods of Financing**

British Columbia's 106 miles of hard-surfaced highways cost approximately three and one-third million dollars. Of this total, the municipalities contributed about $600,000 and the Dominion government $500,000 last year. This latter contribution was part of the federal aid received in common with every Canadian province in accordance with the Canada

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# How Motor Car Has Widened the Agricultural Community

## Not Only is the Truck a Big Factor in the Handling of Farm Products, but the Passenger Car Has Provided the Means for New Social Connections and Activities

By PROF. W. T. JACKMAN, M.A.,
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The position of agriculture has been changed markedly in recent years in several respects. The telephone, in many places the electric current for light and power, the phonograph, the rural mail delivery, and more recently the radio and the motor vehicle, have transformed rural conditions and have brought the country into such close relations with the city and with the entire world that life in the country has been largely revolutionized. In all this change, probably no single factor has exercised a more potent influence than the motor vehicle.

The day when the farmer was content to live almost in rural seclusion and upon a lower standard than the man in the city is rapidly passing, if indeed it has not already passed. He is just as keen as the city dweller that his children should have as good an education as those who live in the city, and the automobile or the motor-bus is being called into use in a variety of ways to assist in securing this desirable object. In addition to carrying country children to and from the advanced schools in the towns, the motor vehicle is making it possible to bring children many miles every day to and from rural consolidated schools where good public as well as high school education may be obtained. Such journeys may now be made in comfort and cleanliness, protected from inclement weather.

This ease and comfort in travel is a leaven which is causing fundamental changes in many directions in country life. The farm family may now have some real relaxation after a hard day's work; they can go to the neighboring town and, while enjoying the ride to and fro, can also have the privilege of hearing good concerts, good public speakers discussing important subjects of public interest, or can secure advantages of other kinds, which will make for a better, broader and fuller life. If, on the other hand, they desire purely social and recreational advantages these also may be enjoyed. The opportunities for education and social life, as well as for pleasure, have been multiplied many-fold by the automobile; and these contribute to a more wholesome community. Those on the farms are no longer confined to the associations of those who are their neighbors, but can meet those of other communities many miles away. A wider social contact is obtained, thus opening the door to new friendships and all the enrichment of life which may accrue therefrom. In addition to these results, the greater comfort and expedition of travel is being reflected in the life of the family, in the church, in the farmers' club and in other community institutions.

But the influence of the automobile is plainly seen also in the methods of farming. Before the advent of this latest and greatest facility for travel, one community frequently differed from an adjoining community a few miles distant in the way it employed and cultivated the land and in the character of and attention given to stock. But under the present conditions the enterprising farmers are anxious to see the methods pursued by good farmers who live a considerable distance from them. The methods of the best farmers thus become more generally applied and the result is to raise farming to a higher plane, based upon scientific principles and the most approved practice.

One of the great problems of the present is the scarcity of farm labor and under these conditions the amount of time spent unproductively by the farmer upon the road is a vital matter. With the use of horses, a farmer living ten to twelve miles from the town formerly considered that it would take most of a day to go and return and attend to a reasonable amount of business while there. Not infrequently he had to go for a single purpose, and that sometimes an insignificant one, such as to secure a part of some machine or agricultural implement. Such journeys were common at times when the farmer was needed and could do his best work at home, that is, when his work could be most productive on the farm.

Labor in earlier days was abundant and the loss of one man's time on the road was not so serious as it is now when there is a dearth of farm labor. Under existing conditions, the use of the automobile reduces to a minimum the amount of such unproductive time on the roads and leaves that much more time for productive work upon the farm. An investigation made but a short time ago among the farmers of Ontario shows that this object is paramount as a reason for the purchase of automobiles and motor trucks; and to this time-saving feature ninety per cent. of the farmers of the United States who replied to a questionnaire of the United States Department of Agriculture relative thereto attributed the chief value of the motor vehicle.

The motor truck among farmers has its greatest usefulness in the marketing of farm products and for this purpose its use is becoming more general. It is not necessary that he should have an expensive truck for a large share of this work; he may find ample satisfaction with a vehicle which, without a box, can be an automobile at one time and, with a simple box frame, may be a truck at another time, or he may attach a light trailer or semi-trailer behind his automobile. The benefits from the use of the motor vehicle in marketing the products of the farm may be grouped under several headings:

### Motor Truck's Advantages

1. Saving of time. The farmer can take his produce to market early in the morning to a place, say, 10 miles away and be back in time for a good day's work upon the farm; or, if the prices are favorable, he may return for additional loads before the prices break.

2. His products, if perishable, can be taken to market in the shortest time and in the best condition, and, consequently, can command the best prices.

3. The motor truck has frequently widened the marketing area, so that instead of being compelled to sell, as formerly, in one market without regard to the price at that market, the farmer can sell in any one of two, three or four markets, according as the highest price may determine his choice. The telephone will enable him to learn the prices at the different points and the motor truck will enable him to reach the best market at the most favorable time.

### Wider Market Range

A study made by the United States Department of Agriculture first in 1919, when the prices of farm products were high, and again in 1922, when they were low, shows the effect of the motor truck upon the farmer's market. The second report shows that 33 per cent. of those who answered the department's questionnaire had changed from a poorer to a better market as a result of the use of the truck and the average distance to market had changed from 8 miles before purchasing the truck to 16 miles afterwards. Before the purchase 73 per cent. were using markets less than 10 miles distant; after purchase, 64 per cent. went to markets 10 miles or more from their farms and about 25 per cent. went to markets more than 20 miles away. Inquiry in the Niagara fruit belt shows that about 40 per cent. of those who have turned to the use of trucks have widened their markets thereby to an amount ranging in mileage from 50 per cent. to 110 per cent. and averaging close to 70 per cent.

In 1918 the Bureau of Crop Estimates, Washington, D. C., showed that the estimated cost of hauling in wagons from farms to shipping points averaged about 30 cents per ton mile for wheat, 33 cents for corn and 48 cents for cotton; but for hauling in motor trucks or by tractors the averages were 15 cents for wheat and corn and 18 cents for cotton. Most of the hauling was done by the farmers themselves and the costs were based largely upon the usual charge in the various counties for hiring vehicles by the day. There was room, therefore, for wide deviations in cost from place to place, and the average results must be accepted with caution.

### A Factor in Dairying

Probably in no single farm operation is the truck used so extensively as in the hauling of milk. This is because the trucks operate every day over definite routes and because a regular amount of traffic furnishes the opportunity for dependable service. It is a service which does not change seasonably and a traffic which requires the greatest care and expedition in handling. In these respects the motor truck is well adapted to the business. While it is well known that an increasing proportion of the milk supply of our large cities comes in by motor truck and that by means of the truck the area upon which these cities are able to draw has been much enlarged, there are no accurate statistics. But in the United States some information of a more definite character is available to show the extent of the milk movement by motor truck. For example, milk is delivered to receiving stations or to distributors by truck for the following cities in the percentages noted: Philadelphia 20 per cent.; Baltimore 45 per cent., (having grown from 18 per cent. in 1919 and 36 per cent. in 1922); Milwaukee 87 per cent.; Detroit 88 per cent.; St. Paul, Minneapolis and Indiannapolis each 94 per cent.; and Cincinnati 97 per cent. The routes commonly run 20 to 45 miles but many extend a greater distance; and on the larger routes large-capacity trucks are used, so that loads of 100 10-gallon cans are common. A more recent improvement in the handling of milk has but lately come into use in the form of a glass-lined tank mounted on a 3- to 6-ton chassis.

These are used for transporting the milk between the receiving station and the distributing centre, but are not yet being used for collection from farm to farm. The speed of transportation and the construction of the tank in such a way as to insulate it from heat by a 3-inch covering of cork protected by metal outside makes it possible to bring the milk to the city in the best condition. Notwithstanding the higher rates charged for haulage by the tank method, several economies are effected which actually reduce the cost below that of shipping by cans; for instance, the labor cost of handling cans between the railway and the dairy and at the dairy is avoided; the large amount of floor space required for cans—one tank will contain as much as 450 cans—will be saved; there will be a saving in the replacement of cans, which have an average life of only about 30 months, at a cost of $4 to $5 each; the loss of milk during hot weather by souring would be overcome and also the loss due to spilling and adhesion to cans. From cost records it appears that there is a saving of 35 per cent. to 50 per cent. in shipping by these thermos-equipped tanks. Such results point to great changes which may be effected in handling milk, through the use of motor trucks with scientific equipment.

### Hauling Live Stock

Animals can be transported for short distances and even at times for distances up to 50 to 60 miles more economically and in better condition than by rail. In cases where railway cars are not to be had and yet shipment of live stock must be made in order to realize the highest prices for them the motor truck may be employed with good results. Household goods may be carried long distances by truck and the service may be economical by reason of the fact that it avoids a large amount of expense of crating and packing and saves in the time required for the carriage of the goods. It is not possible to generalize and say that certain goods should be carried by truck and other goods should be sent by rail, nor to say that up to a certain distance the motor truck is economical and beyond that it is not. Each case must be considered by itself. But, generally speaking, the motor truck should not undertake the conveyance of carload traffic and should not carry for long distances.

### Motor Truck Service

The organization of the motor truck service in the country is a subject which requires careful consideration. There are three ways in which this may be effected: first, each farmer who has enough business to make a truck pay for itself may own one. Such farmers may do occasional work in carrying for others in their own locality and thus keep their trucks more fully engaged. There are some difficulties in the way of this arrangement, especially because of the fact that just when the neighbors might want work done the farmer would want his truck employed upon his own work. Second, a man in the community who has only a small plot of ground may see an opportunity to render a valuable service in acting as a commercial carrier for the people of the community. One of the difficulties in the way of this plan is that in the country the traffic is usually seasonal.

The truck cannot operate in most parts of the country during the winter and the volume of traffic available in a rural community during the spring and summer would not usually prove sufficient to justify the ownership and operation of such a truck. Third, the representative men of the locality may form a co-operative association and as such own and operate a truck, charging for the service according as the owners may decide. The troubles usually associated with a co-operative enterprise would be manifested here. We have had in Ontario two examples of co-operative ownership of motor trucks but neither of them has proved successful. If the volume of business available were abundant, there is no doubt that the other difficulties might be surmounted by skilful direction and management; but hitherto the success of such associations in this field wherever they have been successful has not been long-lived. On the whole, therefore, it would seem that the first system is likely to prove the most satisfactory, at least for some time to come.

### Return Load Problem

One of the great difficulties in the operation of any of these plans is the lack of return loads. Unless the truck has a paying load in each direction it is not operating most economically, and it is practically impossible for an individual operating upon a single route to have a return load for his truck every time it has been unloaded. It would seem that the best way in which to meet this difficulty is to have the trucking business in a particular locality organized by a large concern, with trucks operating from that centre in all directions. With adequate working capital it could maintain a central office in the town or city, by means of which it would be in touch with all the patrons of the service throughout the country and could arrange by telephone for return loads whenever it was possible to secure them. This organization—or a close federation of two or more organizations—at each centre; in this business, as in any other public utility service, competition is inexpedient, regulated monopoly is the desirable form of organization.

## AUTOBUS COMPETITION

Commenting on the keenness of competition between motor vehicles of various kinds, and the electric traction companies, the Indianapolis News summed up the situation throughout Indiana as follows:

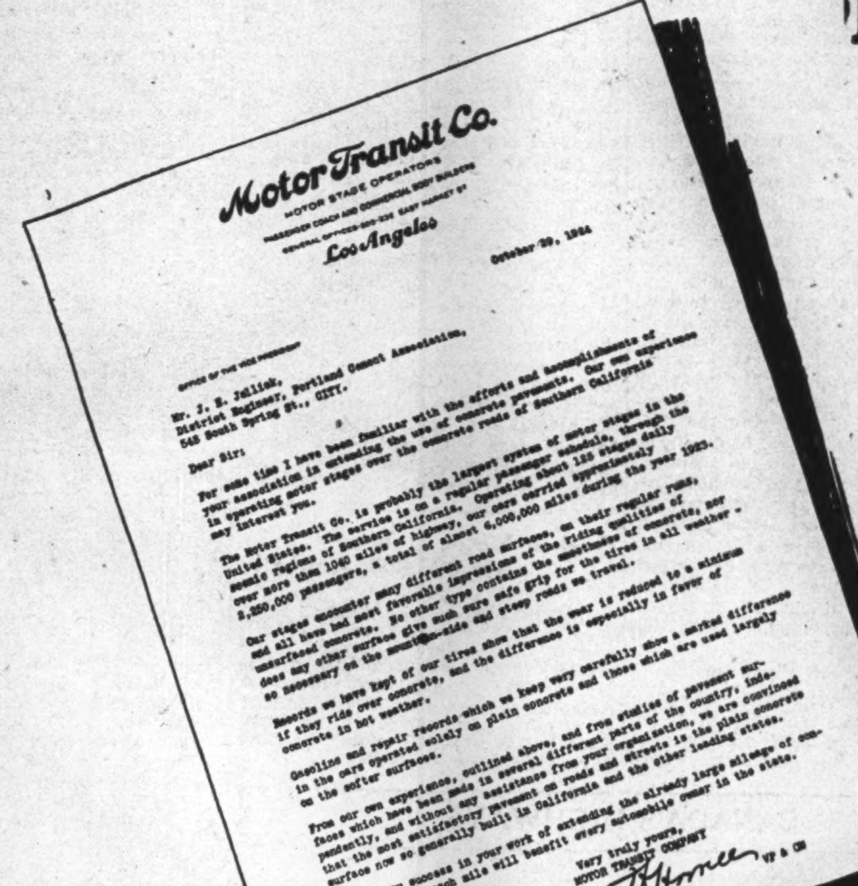
"As the number of motor cars increased interurban passenger business decreased. Within the last two years further inroads have been made in passenger receipts by bus lines. A road that had a hard time making both ends meet three or four years ago has a much more difficult situation to face to-day and conditions are not likely to get any better. One traction common stock has an 'asked' quotation of $2 a share, another $3. Few of them run over a few dollars a share. Various lines have practically said farewell to passenger service and are attempt-

"As the number of motor cars increased of freight hauling. But even there the paved roads and the trucks are in competition with them."

## NORTH VANCOUVER REPORT

The financial statement and annual report of the corporation of the city of North Vancouver shows an outstanding debenture debt of $2,283,921, a local improvement debt of $979,115 and a ferry debt guaranteed by the city amounting to $128,000. The report shows a local improvement sinking fund of $813,9[illegible] and a ferry sinking fund of $23,356. The arrears for the last three years were $1,711, $33,642 and $74,254. The assessment for 1925 on land was $[illegible] and on improvements, $5,366,803. The tax rate for school purposes is 12[illegible] mills, for loan, 16.3 mills and general 8.9 mills making a total of 38 mills.


# Concrete Pavements Reduce Haulage Costs




FOR direct and convincing evidence that concrete pavements save wear and tear on vehicles and reduce haulage costs, read the accompanying letter. It is written by a large vehicle owner and operator, a man whose business necessitates a keen study of road surfaces and who would therefore of necessity recommend only the type of pavement proved best from a traffic viewpoint.

The records mentioned in the letter fully establish the desirability of concrete on a transportation basis. Its durability and freedom from costly upkeep make it even more desirable from the viewpoint of the taxpayer.

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# TRUCKS EFFICIENT FREIGHT HANDLERS; USE IS GROWING

## Seem Destined to Replace Unprofitable Railway Branches

## SOME EXPERIENCES

### Toronto Firms Find Saving in Direct Competition With Steam and Rail Lines

High efficiency is being developed in the employment of motor trucks in both long and medium hauls. This is true in sections where the use of trucks comes into competition with the steam and electric roads as well as to districts where the service of the railways is not so competitive. Good highways are an all-important factor. In the short hurried trips, such as is entailed in heavy city delivery, the horse is still dominant and firms requiring this mode of delivery express the opinion that it will be a long time before there are possibilities of the motor becoming sufficiently economical and efficient for this service.

On short and medium, and some long out-of-town hauls, the truck is constantly gaining favor over the railways. For instance, Loblaws are now employing trucks to haul goods from their Toronto warehouse to Guelph instead of using the steam line of electric railway. They find that they can ship goods for 7c. per 100 lbs., which is much cheaper than by rail and much quicker. The same argument applies to shipments to their Hamilton stores.

Christie-Brown also employ trucks for the same purpose, finding it cheaper to use trucks on such hauls as Hamilton, Port Hope, Port Colborne. They find the saving considerable. Another interesting fact comes out of the experiences of this firm. It is that it is cheaper in handling their goods to employ two light trucks instead of one heavy service truck. They used to make two trips to Hamilton with the heavier truck. Costs were so high that they tied up the heavier truck. Then they tried out the lighter truck and found that it was more economical to use the light truck and make four loads out of what was two loads for the heavier vehicle. Mr. Green, who has charge of the delivery system of this firm, is a strong believer in the truck for such hauls and gave important evidence before the commission looking into the question of hydro radials.

**Use of Trailers**

Another development in the truck business has been the increased use of heavy trailers with the bulk of the traveling being done at hours when general traffic is light, night and early morning. A new phase of this which is coming into common use, is the organization of a through traffic by trucking concerns. The system is that they pick up trailers at one point and drop others. By night travel they can move along quite steadily. Thus firms are able to get delivery at their warehouse in the early morning goods which they may have ordered the afternoon before. Incidentally there is the one handling charge, that of the truck.

The efficiency of the truck was well demonstrated during the fruit season last year when a large amount of the products of the Niagara fruit belt was handled by truck. In the early morning the highway leading to this section was quite alive with trucks. This meant that the produce houses moved direct from the producer to their warehouse in, say, Hamilton or Toronto, and had ready for sale in the morning goods which left the producer's hands but a few hours before. Losses in breakages and pilfering are also reduced to a minimum.

The truck has revolutionized moving from one city to another. This is developing into a heavy business, as witness the large number of such trucks on the highways. In this regard also, some of the truckers have had experiences similar to that of the Christie-Brown Co., in that lighter trucks are more economical than heavy ones for some jobs. Their guiding factor in this regard, however, is advance information on the condition of the roads to be traveled.

**Replace Branch Railways**

Another phase of motor transportation that is coming to the front is where it has become strikingly apparent that the motor is making some of the unprofitable branch railway lines more unprofitable. In some quarters there is a feeling that in this service the truck is bound to supersede the railway.

It is significant, because of the problems arising out of more adverse climatic conditions, and because the Canadian National Railway has had in operation both motor rail cars and trucks for a considerable length of time, that R. A. C. Henry, director of the C. N. R. bureau of economics, recently made such a declaration in discussing some of the economic phases entering into the adjustment of motor vehicles to railroad requirements. Mr. Henry's statements were, also, an interesting commentary on the change in attitude of railroad men to motor transport of all kinds. It is but a very few years ago that the railroads regarded motor cars and trucks with bitter enmity. The transition has been swift if not entirely comprehensive and complete.

Mr. Henry dealt with the various fields in which the motor vehicle seemed likely to thrive; the future, he thought, was especially bright for the truck in connection with long hauls where there are no other transportation facilities, or where traffic is so thin as not to justify continuation of steam service. On that point, he said:

"There is at the present time, and there is likely to develop as time goes on, a demand for transportation of some character where there is no transportation at all or inadequate transportation facilities are at present afforded. The possibility of the utilization of the motor vehicle as a means of supplying the transportation requirements should be looked into before any expenditure is made for the provision of other more costly means. In addition to this there are many cases, both in Canada and the United States, where under existing conditions service is given by steam and electric railways to territories or on branch lines where the traffic is comparatively light, and consequently the continued operation of these services by the steam and electric railways is performed at a loss.

"It is quite possible that with the development of the highway, the steam and electric service may be superseded by the motor vehicle, and the operating losses, resulting from the operation of these branch lines by steam or electricity, eliminated or reduced. There has been considerable experimentation by steam railways not only in the United States, but also in Canada, with a view to cutting down the losses of lines of this character by the inauguration of what are known as 'unit cars,' which are nothing more or less than single units, with a limited crew, propelled by gasoline, steam or electricity with a storage battery."

Classifying the traffic falling generally within the field of the motor vehicle, Mr. Henry stated: "It would appear from a review of such data as now available that the motor vehicle might have distinct economic advantages in the handling of traffic falling within the following classifications:

"Freight — (1) Haulage of commodities from the farmer to the rail or water shipping point.

"(2) In relieving congested terminals.

"(3) In radial operations from large cities in the delivery of L.C.L. (less than carload) lots of merchandise and raw materials.

"(4) In the haulage of perishable farm and dairy products, such as milk, fruit and vegetables." (Ninety per cent. of the milk supply of Toronto reaches the city by motor transportation.)

"(5) Where no other transportation facilities are provided.

"Passenger—(1) to replace or supplement city tram lines.

"(2) In interurban service.

"(3) Tourist service.

"(4) In serving sections that are not provided with steam or electric service."

# ASPHALT BINDERS MEET NEW NEEDS IN ROAD MAKING

## Variety of Requirements and Limited Resources For Canada's Roads

The use of bituminous binder in road building is an ancient practice, but its use has been limited, first on account of its scarcity and again because until recently roads carried only light loads and their construction did not call for the rugged preparation necessary at present. But the introduction of the automobile has changed all that, says C. M. Baskin, of the Imperial Oil Company.

It is not difficult to explain why so much stress is laid on asphaltic materials for the satisfaction of rigid specifications. Asphalt is the principal ingredient in roads; it is the cement that binds and holds together the mineral particles and stone comprising a road. A present-day road is a highly expensive matter and is designed to last for years. If it disintegrates on account of the asphalt cement being off specification it means rebuilding the road, and since usually this is not done immediately, the defective road is there as evidence prejudicial to the petroleum industry as a whole.

The importance of the producer keeping one jump ahead of the consumer can scarcely be over-emphasized, and in this respect the establishment of an asphalt refinery here in Canada has been of invaluable service to road paving concerns. Highway construction was sadly lacking in respect to direct information about asphaltic binders. In the States, the problems were greatly minimized, first by a more or less uniform climatic condition, and secondly by a larger population and corresponding resources. Thus, they (in the States) were able to concentrate on several high grade pavements, using only a few standard grades of asphaltic materials.

Here in Canada, highway construction has called for a greater diversification in materials since the problems have been numerous and the resources limited. To cite one of the outstanding features; we have here in Canada considerable mileage of inferior type roads such as earth, gravel and macadam. These roads have, for the most part, a well-consolidated base, which is most important. These roads have to be maintained as well as built up in one form or another. Likewise the bituminized roads have to be resurfaced by some means not too expensive. In other words, the Canadian paving market demands not only the standard grades of asphaltic materials, but also material for maintaining and resurfacing which is reasonable in price and comes in such form that it can be worked and applied with facility. Research has resulted in the production of asphalts in liquid form, such that can be applied on roads by spraying. The proper type of asphalt is dissolved in a volatile oil. When sprayed on, it penetrates the road as well as seals the top. The degree of penetration is dependent on how compact the road is and on the fluidity of the material applied. The results are that the volatile oil evaporates and leaves the asphalt within and on top of the road. The asphalt which remains acts as a waterproofing material and binder. Applied bitumen forms a carpet on top of the road and evens the whole surface, as well as making it dust-proof.

This form of road maintenance has been encouragingly successful and improvements are constantly effected. All this would have been quite impossible had the Canadian market remained solely dependent on imported asphalts.

# ROAD BUILDING MUST BE ADAPTED TO LOCAL NEEDS

## Each Kind is Valuable For Different Type of Traffic

Both from a construction and maintenance viewpoint, the worst enemy of a good road is water. If it filters through the surface and down to the foundations and then freezes, the road must move, and even if it does not freeze there will be trouble, for the foundations will be softened and will have less carrying power. Should the water only lie on top, it has a puddling action under traffic which causes the surface to soften and disintegrate. For these reasons, the first requisite of any roadway is proper drainage. To provide the best of drainage the surface and the foundations should be so built that they will readily allow the water to drain off to the ditches at the side.

The formerly very popular macadam road proved effective under horse and wagon traffic, for the wheels were all steel or iron tires, but the advent of rubber tires caused trouble on this type of road, due to the fact that the new type of tire, instead of wearing off the stones in the road, merely loosened the dirt which held the stones in place, and, consequently, these roads showed a rapid deterioration under the increase in motor traffic. This was always the difficulty with the macadam road until the bituminous road came along. This newer type is really just macadam in a new guise, for, instead of the stones and stone dust being held together with water, the bituminous road uses a binder of coal tar. This coal tar binder is usually sold under a trade name, although, sometimes, instead of coal tar, a binder of asphalt is used. The coal tar binder when used on one of these roads will not allow the rubber tires to shake its grip on the stones, and in this way the road surface is preserved. Also water is unable to penetrate to the foundations.

**Macadam Extensively Used**

Macadam roads of this type are used extensively and with great success all over this and other countries for carrying heavy traffic. Indeed, one often hears references to the good roads encountered overseas; these roads on the continent are often waterbound or tar macadam, but here, lest the reader think that the English roads demonstrate absolutely the superiority of macadam over the other types of highway, it must be remembered that some of the better British roads date back to the time of Julius Caesar, and this means that they have attained the firmest of foundations. For hundreds of years, as these roads became broken they were merely resurfaced—one of the advantages which applies to the macadam road—the building of a road in this way consolidates the foundations in a manner that could never be expected in a young country. All this emphasizes the need of a good foundation, but not more so, than an eminent American engineer who, before a meeting of the American Society of Civil Engineers, said: "Gentlemen, there are three, and only three points to remember in building a road. The first is foundation, the second is more foundation, and the third is most foundation." These words probably express the real considerations necessary in putting through a new road.

The necessity for a good foundation has long been established, but what of the surface? There are but three choices. First, asphalt on a concrete base; then concrete, and lastly, macadam, with a coal tar binder. (Where stone is scarce, gravel is often used, but the upkeep costs are heavy.) Where traffic is light a binder of calcium chloride is sometimes used, but this type of binder does not eliminate the dust nuisance in the way a bituminous binder does. In the macadam road there is always the necessity of a proper and continuous maintenance, for unless this is carried out, the benefit of the original investment is lost. In this connection, it is possible to obtain the best of service facilities, and the additional treatments to the roads may be obtained at a reasonable cost. The macadam road has some marked features — because of their elasticity, their expansion with heat and cold is not as liable to break up portions of the surface or the foundations—they are also well known for their qualities of keeping down the dust.

**Expert Advice Essential**

But in all this there is but one thing to do when contemplating a road. Go to an engineer—he is equipped to work out the economics of the situation and to finally arrive at which type of road will provide the cheapest transportation in the long run. There are so many factors to be considered in arriving at a conclusion as to which type of road best suits a special need, that special training is required to cope with the problem.

The most outstanding problem in the highway business to-day is the planning of the highway system in such a way that it will adequately provide for future traffic needs. Most of the roadways are planned with a view to connecting centres of population, but there is a wide variation in the number of people, and the business pursuits of the centres of population and surrounding territories, so that there can be no definite width of the right-of-way laid down. A uniform width of right-of-way highways would be an economic waste, and, therefore, the necessity of a careful survey of the future needs of a proposed highway is necessary. It is but recently that the engineer has taken the building of roads out of the hands of the butcher, the baker, the candlestick maker, therefore, the engineer is not to blame for the present deplorable conditions which exist on many of our highways. For the future, a more scientific stand can be expected in these matters—this is but natural when it is recalled that in the United States, the highway industry is close to being as large as the biggest industry there. Last year in this industry 1,000,000 men were employed and the total expenditure was in the neighborhood of $2,000,000,000.

# U.S. TRUCK FIRMS EXPECT BIG RISE IN 1925 BUSINESS

That the demand for motor trucks and buses in the United States so far this year is greater than was anticipated is the opinion of Edward F. Loomis, secretary of the motor truck committee of the National Automobile Chamber of Commerce after an extended visit to the plants of truck manufacturers in the Middle West. According to Mr. Loomis:

"Manufacturers are both expecting and planning for a volume of business considerably in excess of that obtained in 1924. The feeling is prevalent that the use of commercial vehicles will greatly be expanded because of favorable business conditions everywhere predicted for 1925, and because of the increase in hard-surfaced highways.

"Considerable additional capital is being placed in motor bus manufacturing facilities. It is to be expected that about 16,000 motor buses will be built in 1925, as compared with 12,000 in 1924.

"Many truck manufacturers are working under larger production schedules than normal. In several instances inability to keep up with the demand for special types of vehicles is reported. In some cases where volume of production has been lowered, the manufacturer has adopted a new restrictive sales policy which places him upon a sounder financial plane.

"In line with this, evidence of better and more conservative sales policies was quite generally found. Manufacturers seem to be tightening up on credits and to be less liberal with trade allowances. These facts, coupled with the dropping out of business of a number of small manufacturers and the development of much new business, seem to have relieved appreciably the strain caused by highly competitive conditions in the trade in the past.

"The sale of 1,800 buses to street railways in 1924 and rapid strides in experimentation with the motor truck by railroads are among the factors upon which truck and bus manufacturers are basing confidence in continued and increasing demand for commercial motor vehicles during the next few years."

## Toronto Suburban Sale May Now be Cleared Up

The possibility of a settlement being reached in the question of the sale of the Toronto Suburban Railway seems imminent judging from a letter read at a recent meeting of the Weston Town Council from E. A. Galloway of the C. N. R., asking the council what were Weston's intentions regarding the York Township proposal. This proposal stipulates that, in the event of the township being granted running rights for the T. T. C. into Weston, all competition must cease. This entails, of course, the removal of the buses and the fast battery service operated by the C. N. R. In view of the fact that Weston has thus been definitely requested to show its hand in this matter, further meetings of the council will be held to give the question special consideration.


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# A Strategic Location for International Industries

# BRIDGEBURG

## The Centre of a Great Manufacturing Area

THE DISTRICT of which Bridgeburg is a logical centre is already known as the manufacturing location par excellence, for plants having their parent company across the international border. More than two-thirds of the branch plants of American concerns operating in Ontario are found in this district, and in this district Bridgeburg offers advantages and opportunities for manufacturing concerns that are second to none.

The town of Bridgeburg has a present population of 2,700, and with the adjoining town of Fort Erie a combined population of 4,300. But this population is growing so rapidly with the advent of new industries that these figures only represent a mile-stone in its progress.

There is a logical reason for the preeminent position that Bridgeburg holds as a manufacturing centre. It is just across the river from Buffalo, N.Y., one of the aggressive manufacturing centres of the United States, and as a result there is an ample supply of available labor. Bridgeburg offers a pleasant and economical home for skilled and semi-skilled labor. It has been noted in the past for its freedom from labor disputes.

The transportation facilities of the town are unsurpassed and power resources are available at very low cost.

It is eminently worth the while of any interested parties to make a further study of these advantages.

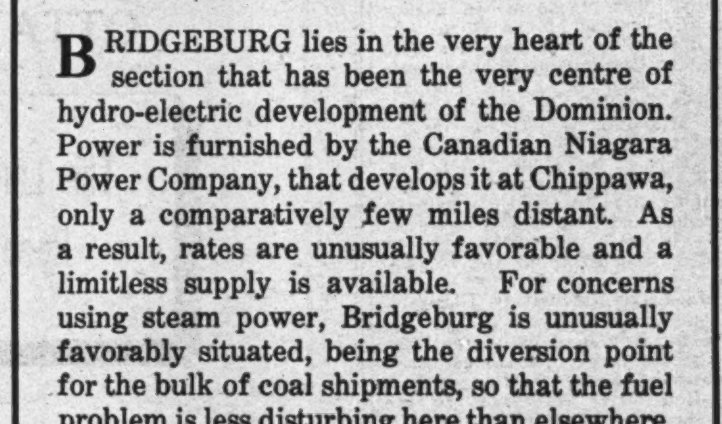
## Transportation Facilities Are Unequalled

The town of Bridgeburg is one of the most important gateways of Canada, being at the Canadian end of the International Bridge. Seven railroads enter the town, the Canadian National, Canadian Pacific, Michigan Central, Wabash, Toronto Hamilton and Buffalo, Pere Marquette, and Pennsylvania; this assures direct and economic railroad facilities to all parts of the continent, while the freight rates to Western Canada are equalized with other manufacturing points between Montreal and the Detroit River.

There is also a splendid water communication.

## Splendid Power Resources

BRIDGEBURG lies in the very heart of the section that has been the very centre of hydro-electric development of the Dominion. Power is furnished by the Canadian Niagara Power Company, that develops it at Chippawa, only a comparatively few miles distant. As a result, rates are unusually favorable and a limitless supply is available. For concerns using steam power, Bridgeburg is unusually favorably situated, being the diversion point for the bulk of coal shipments, so that the fuel problem is less disturbing here than elsewhere.



International Bridge, Bridgeburg

An Aeroplane View of Bridgeburg

Town Hall, Bridgeburg

## A Town of Many Advantages

In addition to its advantages as a manufacturing centre, Bridgeburg has much to offer as a residential centre, which is in turn a factor in developing a contented labor situation, so essential to successful operation.

Bridgeburg has all the advantages of a city with the economy of living costs that is the advantage of the small town. Taxes, both business and personal, are exceptionally low and this despite the fact that the town is thoroughly equipped in all those civic developments that make for the comfort of its citizens. The town owns its modern sewerage and water system, and has a thoroughly efficient fire department. It has three hotels and four churches, splendid parks and a modern library building.

The Niagara Boulevard between Bridgeburg and Niagara Falls is one of the most beautiful drives in America, and is a great attraction for visitors.

It has all the advantages of a city, in that Buffalo is only a short distance away, and there is an hourly service between Bridgeburg and that city.

All the fast Michigan Central trains between Detroit, Chicago and New York stop at the town. This enables New York to be reached in nine hours, Detroit in five, Toronto in three, and Chicago in thirteen.

In the section surrounding Bridgeburg is an agricultural country of amazing richness, so that a plentiful supply of farm produce is always available.

The town itself is an attractive and substantial place of homes, with delightful surroundings and everything to make for the comfort and contentment of its citizens.

## These Industries are located here

Horton Steel Works, Ltd.
Tuttle & Bailey
Genesee Pure Food Company
Mentholatum Company
Buffalo Specialty Company
Dominion Gravure Company
Canadian Tool
Pratt & Lambert
Williams Gold Refining Co. of Canada, Limited
World's Dispensary Medical Association
Taylor Specialty
Niagara Hy Tools Ltd.

## The Mayor and Council

H. T. Hall, Mayor
C. S. Frankland, Reeve
J. T. James, Councilor
G. F. Broadley, Councilor
Chas. Long, Councilor
John H. Atwood, Councilor
John Tolmie, Councilor
A. E. Ray, Councilor

**The Chamber of Commerce will gladly furnish all information to interested parties.**

## These Opportunities are Offering New Industry

**The proximity to the United States permits the cheap and rapid transportation of raw materials and finished products, and enables branch plants to keep in close touch with the parent organization.**

**Availability of desirable factory sites, with splendid yard facilities, that may be bought at reasonable terms; while favorable arrangements can be made regarding taxes.**

**Freight rates on fuel are lower than at almost any other point in Canada, and this obtains with both coal and oil.**

**Ample power is assured for all time, and with an assurance of low rates.**

**These factors, in conjunction with an unusually favorable transportation situation, make Bridgeburg a gateway to Industrial success.**

# MOTOR TRANSPORT IS REGULATED BY SLIDING TAX

## Heavier Trucks Must Pay For Greater Damage To Roads

## HARD TIRES WORSE

### But Commercial Truck Here to Stay and Must Not be Too Heavily Burdened

The rapidly increasing use of motor trucks on Canada's growing network of hard-surfaced highways has given rise to a new and complicated problem—that of the regulation of this traffic from a standpoint of financing replacement, the necessity of which grows more frequent year by year. The trucks, admittedly, should be required to help pay for the road depreciation which they cause; but they are part and parcel of the country's commercial advancement, and the latter would naturally be retarded by the placing of too heavy restrictions or handicaps upon their use. The provinces are, therefore, faced with the necessity of producing a type of legislation which will keep the cost of road maintenance within the range of the revenue derived from the trucks, without placing an undue burden upon industry.

That the motor truck is more harmful to hard-surfaced roads than the passenger automobile, and the hard-tired vehicle than that with pneumatic tires, has been established. A series of experiments recently carried out by the United States Bureau of Standards, for the Roads Department, indicates that the motor car on pneumatic tires cannot deliver an impact greater than twice the static weight of the load, including the weight of the car, while a badly worn solid tire is able to deliver an impact blow up to seven times the weight of the load. This is conclusive evidence of the destructiveness to the roads of the hard tire. The motor truck, nevertheless is an established fact, and must be recognized as such, especially in view of the growing popularity of cross-country freight routes, and railway feeding lines.

**Sliding Scale Registration Fee**

In order to recoup the municipalities and provinces for the damage done by trucks, the provinces have devised a sliding scale registration fee, based on the horsepower and weight of the truck, and on seating capacity in the case of motor buses. In Ontario, for example, a truck of less than two tons, equipped wholly with pneumatic tires, pays a registration fee of $16, while a truck of the same weight equipped wholly or in part with solid tires pays $18. A truck between nine and ten tons in weight and carrying capacity, pays $110 if equipped with pneumatic tires, and $130 if equipped with hard tires. The heaviest truck, equipped with hard tires pays $168. There is a gradual increase in the spread between the registration fees of motor cars using hard and soft tires, as the weight increases. The width of the rear tire is also taken into account, where the wide wheels are used. While these provisions may be entirely revised during the current session of the legislature, they are fairly typical and serve to illustrate the method adopted.

In the province of Quebec, pleasure vehicles are charged for registration by the horsepower of the motor used, while commercial vehicles are charged by the weight and capacity. For less than one-ton trucks there is a fee of $50, and $50 additional for each ton or fraction thereof if the weight exceeds three tons.

In New Brunswick the tax on all cars is rated at $1.20 per hundred pounds. Trucks of a carrying capacity of not more than one ton, pay $15, as well as 40 cents per hundred pounds weight of truck, and, in addition, 20 per cent. of these two taxes added together. The fee increases on a sliding scale up to five tons weight, above which weight trucks are prohibited from the highways of the province.

British Columbia has a unique system of registering motor vehicles. A registration fee of $10 is payable when the car is first registered, and after that an annual license fee is charged. This is based on what are called taxation units. These are computed by adding the value of the motor vehicle, expressed in dollars, to the weight of the vehicle expressed in pounds. Assuming this total to be 2,250, the registration license fee would be $22.50. For each additional hundred taxation units there is an additional fee of 90 cents.

**Pneumatic-Tired Trucks and Buses**

In the case of commercial vehicles and autobuses equipped with pneumatic tires, special requirements apply. The province of Quebec charges $25 registration on such vehicles of less than one ton capacity, and so on up to three tons, in excess of which the charge is $40 per ton, or fraction thereof. A lower rate is charged on cars used by farmers exclusively in their work, and for other basic industries. In Ontario the registration fee on motor buses is based on carrying capacity. The seating capacity of the vehicle is multiplied by 150 to determine the weight.

What has been said is sufficient to illustrate the methods adopted by the provinces to regulate the use of heavy trucks from the standpoint of road preservation. There are innumerable other provisions specifying the total weight of load that may be carried in relation to width of the tires, and the maximum weight of a load allowed on certain roads. Without going into detail with regard to these, it is evident that the whole principle of registering motor vehicles is based on a combination of the degree of destructiveness to the roads, and a proper share in the revenue of governing bodies for this purpose.

## Britain Substituting Autobuses for Trams

A definite movement in the direction of the abandonment of tram cars in favor of trackless electric cars and motor vehicles is in evidence in many parts of the United Kingdom. The Chesterfield-Derbyshire Corporation is one of the last to scrap its tramways and to adopt trackless cars operated by overhead electric contact. A recent issue of the London Mail states that public opinion is increasingly convinced that the old system of rail cars is doomed to be replaced by a more rapid and mobile system of transport.

Other cities which have adopted the trackless electric car and the motor omnibus include Sheffield, Birmingham and Manchester. In Leeds public opinion has recently frustrated an attempt on the part of the city authorities to prevent private motor buses from competing with the municipal tramways. The Keighley Corporation is at present substituting trackless cars. It was stated that with the sum that would have been required to renew the tramway tracks, 15 trackless cars have already been secured, and that more are being purchased.

# The Gasoline Motor and the Permanent Roadway Are New Factors in Transportation

(Continued from page 17)

the liabilities to damage which would arise therefrom, are reduced to the minimum when only two handlings are required with the motor truck.

**Advantages of Truck**

This business can also be carried on with greater speed than when the goods are sent by railway. It takes time to receive at the terminal goods destined for outbound shipment, pass them through the terminal, make out the necessary papers, load them into appropriate cars, switch the cars to the proper track, give noticed to the consignee at destination and await his removal of the goods to his own establishment. Seldom can this work be done in less than three days and not infrequently it takes eight to ten days for such a shipment to reach the consignee after it has left the shipper. But by the motor truck it could be carried at less expense and in a very small fraction of the time required by railway. In the present times, when men are depending more and more upon prompt shipment, it is an important advantage that shippers have the services of the motor truck at their command. Besides saving time, it permits the carrying of small inventories with the resultant saving of interest charges, it provides for regularity of delivery which aids the operation of plants and there is also economy in that less need be spent for boxing and crating when the goods go by truck.

What has been said here applies chiefly to the movement of L.C.L. freight between large cities and suburban points within a radius of 25 to 30 miles, or even more. That this traffic is particularly appropriate to the trucks is shown by the fact that this was the first field to be invaded by them, and the financial returns from it showed it to be profitable to them.

**Railways' Short-Haul Problem**

Would the railways, at the present time, be justified in abandoning this short-haul business to the motor trucks? Such a course would be of doubtful expediency, for several reasons. In the first place, the motor trucks have not yet attained to the position of regular and permanent carriers: when the conditions of operation are favorable, they come in and take the cream of this traffic, leaving the poorly paying business to be carried by the railways. The latter must, therefore, maintain their organization intact for handling this L. C. L. business, and it would not be good policy that they should surrender the best-paying traffic to the trucks and preserve their organization for the low-grade stuff. Not until the trucks are ready to take all this traffic would the railways be judicious in abandoning it. Moreover, at the present time, when the motor truck has not yet attained to the status of a common carrier, it is under no obligation to furnish regular service under all conditions. If the weather is inclement or the condition of the roads would make it difficult to operate, the motor truck remains in the garage. This would be wholly unsuited to the public needs, the demands of which make it essential that freight should be moved under all variations of conditions. Finally, a considerable share of this traffic comes from other lines or connections or from more distant points. Not all the L. C. L. freight to or from all the local stations with a 25 to 30-mile zone of a large central city originates or terminates within that zone, and the railway is under obligation to forward such traffic received from its connections. It is, therefore, committed to the handling of this business until such time as the motor trucks are ready to take all of it and to render regular common-carrier service.

The elimination of way freight trains, calling at every local station along the line near a large city, has been effected by some of the railroads of the United States. Where, in portions of the country which have the greatest density of population, stations are found every mile or two miles along the line, the expense of distributing or collecting traffic by the regular train service is very costly. The operation of a local way freight train with its many stoppings and startings and the accompanying waste of time is a fruitful source of uneconomical performance. Such a use of the line prevents the more profitable employment of it in more remunerative service. As a case in point we may mention that the Pennsylvania Railroad System, after a careful survey of the conditions along its lines out from Philadelphia, decided to substitute motor truck carriage for the peddling way freight train service, in the distribution of L. C. L. freight; and in May, 1924, this change was in effect on twelve separate parts of that system, comprising between 400 and 500 miles of operation. This involved no change in the railroad's relations with the public; the freight was brought to the railroad station, the railroad bill of lading was used, and the shipper paid the current railroad freight rates. The only change is that this local traffic is carried by the motor trucks under a contract between the Pennsylvania Railroad, and a motor truck operating company.

**Instead of Branch Lines**

2. Closely related to the foregoing is the possibility of using motor trucks instead of building branch lines of railway. The construction of branch lines or feeders of the same general character as the main line, involves the expenditure of large amounts of capital, upon which fixed charges accumulate to the same extent when the traffic is light as when it is heavy. If the anticipated volume of traffic should not materialize, or if the original amount should subsequently decline, there would probably be a considerable loss of capital as well as in operating results. But if motor trucks were used, instead of laying down a railway, the capital expenditure would be much smaller comparatively; the capital necessary would be made to keep pace with the extent of the traffic offered; and if the traffic should subsequently decline the motor trucks could be transferred to some other place or put into some other work without any loss of capital. If the amount of traffic were small an ordinary good road would suffice, and, if it became heavy, there would be justification for an improved roadway.

The demand for branch lines to connect with the National Railways has become particularly insistent during the past two years. It is not our purpose to say or even to suggest that some of these are not necessary; but it is highly essential that economy of capital expenditures should be secured, and, if the present needs at some points could be met by motor trucks, would it not be desirable that the construction of branch lines at these places should be postponed until the traffic would be heavy enough to pay all or a large share of the operating expenses and the fixed charges of such branch lines?

To those who are familiar with the recent developments in the United States, the proposal now made to discontinue the operation of approximately 1,000 miles of branch lines of the Boston and Maine R. R. is very significant. For years the operating costs on these lines were low, and their financial deficits were not a serious drain on the revenues of the system; but the advent of the automobile, motor bus and motor truck, which have taken away a large part of the always meagre traffic, and the application of standardized wages and hours on these lines have added enormously to the operating costs. The time has come, therefore, when the increasing losses from these poor lines must be stopped; application has been made already to the Interstate Commerce Commission for permission to discontinue over 130 miles, and other applications will follow. The traffic now carried on these lines will be left to the motor vehicles.

## Organized Truck Service

3. Organized motor truck freight service—and the same applies to the motor bus—has a broad field of usefulness in supplementing and extending rail service. There are districts back from the railways which, because of insufficient traffic, are prevented from enjoying railway service, but which could be provided with transportation by the motor trucks. If the latter were operated by the railway or by a concern working in conjunction with the railway, shipments of freight could be made to and from such a territory upon a through railway bill of lading and all the facilities of the railway as a common carrier would be available to this otherwise neglected district. The extent of the motor service would be made to correspond with the demand for it. Then, after the growth of such new trade areas had been stimulated so that the traffic would justify the more ample service of a railway line, the latter could be constructed with an assurance of success.

4. Motor trucks are used and could be employed with still better results in making cross hauls from stations on one subdivision of a railway to a station or transfer point on another subdivision, in order to avoid the necessity of handling the traffic through an intermediate transfer.

**Relieving Terminals**

5. The motor truck seems destined to play an important part in relieving or obviating terminal congestion, which, in some large cities, is becoming an acute problem. The larger the city grows the greater is the strain upon its terminal facilities and the larger the accommodation which the railways must provide for receiving incoming freight, for loading outgoing freight, and for yards and buildings. At the same time, the value of land for such purposes, located as it must be in the most expensive sections, tends to increase even more rapidly than the growth of the city. The cost of the larger accommodation may, therefore, become prohibitive. But it is possible to retain the central offices at that part of the city and provide at a less expensive section the requisite enlarged terminal facilities for receiving and loading outgoing freight, for providing the means of distributing inbound freight, for making up and breaking up of trains, etc. Traffic could be readily collected from and distributed to the shippers and consignees by motor trucks, even when haulage for a considerable distance was necessary. In this way the rigidity of such terminals, which is now an important factor in limiting their usefulness, would give way to a measure of elasticity. Then, too, the community may grow away from the section where the station is located, but by the use of the motor truck "off-line stations" could be placed at points where they would be most convenient and economical for the collection and distribution of L. C. L. freight. This economy would also be very marked when the railway has to make larger provision for team tracks for the handling of freight; and, in fact, to those who are familiar with the operation of railway terminals, these suggestions will bring to mind many other ways in which economy would be secured.

Incidentally it may be remarked that the Canadian system, under which in the important Eastern centres a large proportion of the haulage of freight to and from the depots is done by cartage companies operating under established tariffs, is a potent means of keeping the terminals from becoming congested. In this respect it stands in marked contrast to the system in effect in the United States, under which after the consignees have been notified of the arrival of their freight the removal of it is left entirely to their own pleasure. It is hoped by the railways that the present movement to secure store door delivery and collection by means of motor-trucking organizations may become increasingly strong until it is put into operation, with the same results known here and in England.

**Use of Unit Containers**

6. Another means by which the motor trucks may be co-ordinated with the railways for the rendering of the fullest measure of service is in the handling of unit containers. The latter have come into use on some of the railways of the United States in order to save labor and time in the handling of L. C. L. freight. They are steel frame boxes which, by means of a crane, can be loaded upon and taken off cars which are made specially for them. The container is loaded by the shipper and then locked; and it is not unlocked until it reaches the consignee. The motor trucks are used to bring these containers to the railway station where they are hoisted upon the cars; and when they reach their final destinations they are removed from the cars and loaded upon the trucks, by means of which they are then conveyed to the consignee's establishments. For some time these were employed only in handling traffic of consignees and shippers in large cities; but recently their use has been extended out to the country. For example, on the New York Central and the Pennsylvania system containers of this kind are sent out to important stations along the lines of railway where they are transferred to motor trucks, which operate in conjunction with the railways and carry the containers on their final destinations in the country towns and villages. Both of these railroad managements are convinced that the railroad itself or through a subsidiary company should not undertake to perform this trucking, but should only work with well-established trucking lines; or, where there are no such lines already established, they should endeavor to have them organized for this purpose. When goods are loaded into these containers they can be sent any distance by the cheapest of transportation facilities within the zone of the most economical operation. Handling costs and the possibilities of loss through pilferage are reduced to the minimum; in fact, pilferage is virtually impossible and this eliminates one great source of loss and damage claims. It is the motor truck which makes possible the freest movement and the widest use of these containers.

**Keeping Trucks at Work**

If motor trucks are to be profitable they must be kept constantly employed. The truck, like a railway car, while standing idle is a constant source of loss, and in using the motor truck, every means which will contribute to its constant use should be adopted. This suggests the imperative need for unit containers, demountable bodies, trailers and semi-trailers, and every other kind of equipment which will keep the trucks moving. But the experience of careful operators of motor trucks points strongly to the conclusion that in most cases the economical range of the truck should not exceed 30 to 50 miles. All long-distance hauling seems to belong to the domain of the railway service.

On the whole, we may say the railways represent the wholesale aspect of transportation—the carriage of enormous quantities of commodities, and the transportation over long distances, all of which we might designate as "mass transportation"; while the motor trucks, with their small investments of capital in separate units, represent the retail aspect of transportation. Much remains yet to be done in the way of scientific experiment and comparison of results before we shall be able to fix reasonably precise limits within which each of these agencies should operate in order to be economical.

## NEED INSISTENT TO GET TOGETHER TO SOLVE ISSUE

(Continued from page 1)

where he now has his home and his holdings.

Having made good in the field of municipal affairs, there seemed to be no good reason why he should not go further. Out West there is always scope for a fellow that can hold his own in a crowd. The Grain Growers had secured quite a hold in Edwards' community, and as they wanted their leading men to represent them at the annual conventions, he was among those chosen. He looked after things so well that he was kept in that position.

**An Easterner in the West**

In due time Edwards began to climb in the ranks of the Grain Growers. First he became a member of the provincial executive, and it soon became evident that he could hold his own in any company of this kind. Gradually the older members began to drop out, which meant that those more of Edwards' age got a better chance, and so the spotlight began to centre on him in the provincial gatherings.

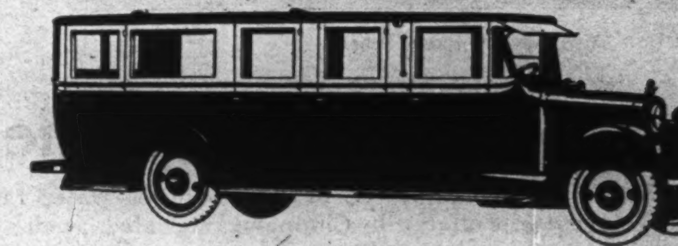
After a while the feeling got around that possibly the association might be better off if there were a change in the presidency. Hon. J. A. Maharg had occupied that position with credit for ten years—which is a long while in that country. Edwards' friends pushed him into the contest for the presidency and last year he won out. He has been helped by the fact that he is a ready speaker. He talked too fluently, for when he first came down to Ottawa to plead his case for the Saskatchewan farmers, he talked almost too fast for the shorthand reporters. But he got over that and now makes as presentable a case as anybody.

The chief point in all this is—here is a man head of 15,000 members of organized farmers in the West, who was born and brought up in the East, and in whom Eastern roots lie deeply buried. He is a vigorous champion of the interests of the Western grain growers, as he has to be in order to hold his job; but it would be foolish to say that he could not sit in at a conference of both Eastern and Western interests and not have a due appreciation of both, and the need of composing differences.

The feeling is growing here that the representatives of the various portions of the country have to get together whether they like it or not. Most of those who flirt with secession admit, when they come to discuss matters seriously, that it is not a practicable solution, this means they admit that they have to get together and find solutions.

At times the outlook for those who advocate the get-together conferences is not very bright; but it now looks as though the very crisis that has been precipitated were forcing the conference method to the front and will keep it there.


What Reo Means to Transportation



Reo Sedan Bus

REO Buses provide transportation companies with the means of increasing their areas of operation, without adding to existing trackage. New routes can be opened up, or present service effectively supplemented, on a most moderate investment.

Reo Buses allow frequency of service and flexibility of operation. Two types provide for interurban and city routes.

Standardized bodies, Reo manufactured chassis, 6 cylinder engine, 13 plate clutch — noiseless transmission — scientific distribution of chassis weight — lightness with ruggedness — pneumatic cord tires.

These explain why Reo Buses are comfortably safe, easy to drive, powerful, dependable and profitable to operate.

Reo Pay-Enter Bus

Reo Motor Car Company of Canada, Ltd.

Windsor - Ontario

# CHIPPAWA

## An Industrial Town in the Making

### One Mile South of Niagara Falls, Canada

**An Attractive Business and Industrial Location at the Centre of the Cheap Power Area**

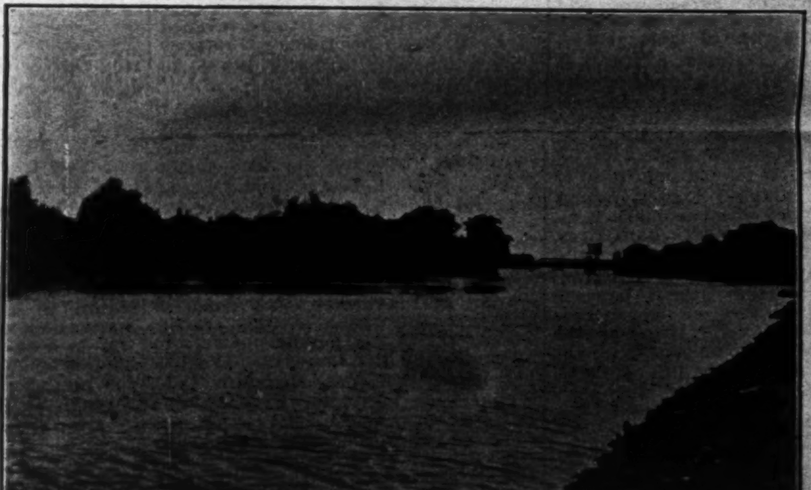
The Council of Chippawa.

**A Delightful Home Location with Most City Advantages Within Easy Reach of Large Centres of Population**

The Chippawa Public School.

Reeve A. J. Snider
D. M. Weaver
Charles Ricker
W. Smeaton
C. E. Kaumeyer

The Clerk will be glad to supply any information at any time.



The Intake at the Chippawa Canal, Showing Splendid Available Factory Sites.

## If Power is a Factor—Come Here

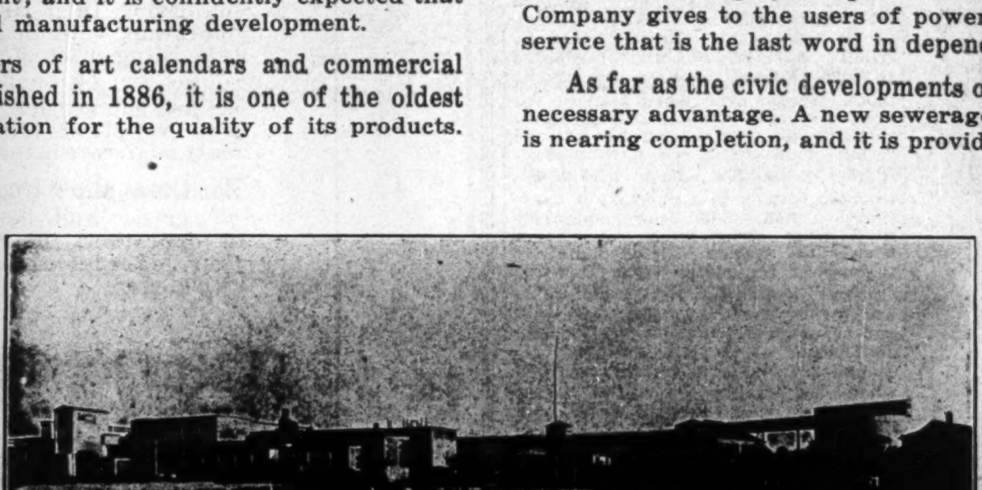
ANY industry whose problem is power, or who requires water facilities should consider the advantages offered by Chippawa. Located at the intake of the great power canal that serves the Hydro-Electric developments of the province, there is water in abundance. There is more than that: electric energy in limitless supply and at the most modest rate.

These were among the factors that led to the location of The Norton Company, Limited, manufacturers of abrasives, at this point; and it is confidently expected that this great plant will be the nucleus of a decided manufacturing development.

The Empire Novelty Company, manufacturers of art calendars and commercial printers, is another important industry. Established in 1886, it is one of the oldest industries in the town and has a national reputation for the quality of its products. The factors that made Chippawa a suitable location for these concerns obtain for a multitude of other manufacturing interests.

At the present time there are a number of splendidly located factory sites available on the canal, with all the advantages of ample power, quick and economic transportation, low plant costs, moderate priced properties, and satisfied and inexpensive labor.

Chippawa welcomes the comparison of opportunities presented here, with those available elsewhere, being confident that it has much of value to offer to any concern considering a new plant in Canadian territory. Any information that may be required will be promptly and gladly furnished, while the town assures any concern contemplating the possibility of locating here that they will be given every consideration and every reasonable assistance.



Plant of the Norton Company and the Norton Grinding Company.

## A Prosperous Centre in Pleasant Surroundings

NOWHERE is there a section that abounds in more historic, or is more generously favored with, natural advantages. Chippawa is in the heart of a bountiful and prosperous section, and the town itself is prosperous and progressive, having a population of 2,000. In addition to the Norton Company and the Empire Novelty Company, the general business section of the town is prosperous and thriving.

Chippawa is served by the Michigan Central and International Railways, which provide a thoroughly adequate transportation service. The Chippawa Hydro-Electric Company gives to the users of power a more than ordinarily satisfactory service; a service that is the last word in dependability, rendered at the minimum of cost.

As far as the civic developments of Chippawa are concerned, the town offers every necessary advantage. A new sewerage system costing in the neighborhood of $150,000 is nearing completion, and it is provided that after this work is completed there will be a definite policy of road building, and of developing the factory sites. The town has ample fire protection, a splendid lighting system, and good water.

The school accommodation is exceptionally good, the public school having six teachers and 250 pupils.

The substantial building development of recent date gives added weight to the statement that Chippawa is, and rightfully so, a residential section of unusual beauty and comfort. This is an important factor in view of its close proximity to larger centres that cannot always offer the same advantages at a correspondingly low cost. It is but a fifteen minutes' journey from Chippawa to Niagara Falls, Ontario, or Niagara Falls, New York. Altogether Chippawa has advantages that should call it to the attention of the manufacturer or the business man or the home seeker.

# Motor Truck Will Become Adjunct of the Railways

## Sir Henry Thornton Tells World Motor Transport Congress Two Must be Harmonized—Services and Rates Must Be Regulated as Common Carriers

By SIR HENRY THORNTON, President, Canadian National Railways.

The passenger motor vehicle had its inception a little over twenty years ago and one has only to glance at the production records of 1923 and compare them with 1903 to appreciate the stupendous growth of the industry during that period, and when one glances at the 1903 models and makes a comparison with the models of to-day, some appreciation is had of the evolution which has taken place in the development of the motor vehicle itself. The motor truck, or freight vehicle, is a product of a much more recent period for reasons which can very well be appreciated.

Recent statistics indicate a motor passenger vehicle for every ten people in the United States and for every eighteen people in Canada, also fourteen motor trucks per thousand of population in the United States and six per thousand in Canada, with fabulous sums invested in plants for manufacturing and distributing motor vehicles and motor vehicle accessories.

### Railroad's Interest in Motors

I have been extremely interested in the development of the motor vehicle industry for several reasons, amongst which could be mentioned:

(1) Its importance as a source of traffic directly and indirectly for our railways.

(2) Because it has become such a potent factor in our daily economic life.

(3) Because it has appeared on the horizon as an active competitor with our railways for certain classes of business.

Our present economic structure is so complex and the process of evolution apparently so rapid that I consider it a wise policy for us to have a free and open exchange of views to the end that we may fully comprehend all the factors entering into the motor vehicle industry and its relation to the general scheme of transportation.

It behooves those of us who are engaged in the operation and development of other transportation facilities to consider very carefully to what extent, if any, our respective agencies may be supplemented by or developed in co-operation with the motor vehicle, as I agree with the Special Committee No. 4, appointed by the president of the Chamber of Commerce of the United States to enquire into and report upon the "Relation of Highways and Motor Transport to Other Transportation Agencies," when they say "the best interests of the public and the rail, water and motor carriers lie in co-operation between the various agencies of transportation, rather than in wasteful competition."

### Accurate Data Needed

In considering the question of the adjustment of the motor vehicle to most effectively meet railway requirements, it is necessary to have accurate data as to its physical limitations and as to the cost of operation and maintenance, including the contribution now made, or which should be made by it, towards the maintenance of highways.

Fairly reliable information is available regarding cost of operation of motor vehicles in passenger service, because this service has become highly organized and statistics in regard thereto have been maintained over a considerable period of time.

The same cannot be said, however, in regard to the motor truck, and it is very doubtful indeed if any very conclusive data are yet available in regard to the contribution which motor trucks should be called upon to make, in order that they bear their proper proportion of the maintenance of the highways which have to be specially constructed to accommodate such heavy traffic, the capital cost of important highways running from $30,000 to $50,000 per mile.

### Two Aspects of Motor Transport

It must be quite clear that the motor vehicle, so far as it affects the railway may be considered from two standpoints:

(1) As a passenger facility.
(2) As a freight facility.

As a passenger facility, it, of course, has to be judged by the ordinary standards the public is accustomed to apply to passenger accommodation, namely:

(1) Its ability to render regular, comfortable, safe, adequate and satisfactory service as efficiently as possible under all ordinary conditions.

(2) The cost of the service.

There does not appear to be any doubt but that the motor vehicle might quite reasonably be expected to fulfil these conditions in regard to a certain limited class of passenger traffic, particularly on branch lines and in large terminals, thereby supplementing the existing railway passenger accommodation and, in some cases, permitting the railways to eliminate altogether or at least reduce the volume of non-remunerative passenger service.

### Importance of Motor Truck

From the standpoint of the transportation of freight, however, adjustment of the motor truck bids fair to develop into a factor of some considerable importance in dealing with certain classes of traffic, for example:

(1) The haulage of commodities from the farm to the railroad or water shipping point.

(2) The use of the motor truck in relieving congested terminal conditions.

(3) The use of the motor truck in radial operations from large cities in the delivery of less than carload lots of merchandise and raw materials.

(4) In the haulage of perishable farm and dairy products, such as milk, fruit, and vegetables.

(5) In the operation in short hauls between centres of population, where the truck offers a special degree of service in the carriage of commodities from the consignor to the store door or home of the consignee, where time is an important factor.

(6) In longer hauls where rail development has not been sufficiently extensive.

In this connection, I am pleased to note that a number of the railways of the United States have been carrying on extensive investigations during the last two or three years, with a view to ascertaining to what extent the motor vehicle could be adjusted to meet railway requirements. We, on the Canadian National Railways, are watching these experiments with considerable interest, as we feel we are likely to be faced in the very near future with conditions substantially the same as those at present obtaining in some of the more densely populated sections of the United States.

### Store Door Delivery in Canada

In Canada, as in England, store door delivery has been adopted as a solution of the problem of the freight house congestion, and for a long time carriers have provided in the principal distributing centres a cartage, or a trucking service, between their freight terminals and the warehouses or store doors of the "traders."

The service is operated by the carriers under contracts or agreement with teaming companies acting as their agents. It applies to traffic rates in the Canadian Freight Classification as fifth class or higher, less than carload and carload, with the exception of bulk freight or articles weighing 2,000 pounds or over, per piece or package.

Tariffs are issued by the Canadian carriers for the teaming service and are filed with the Regulating Commissions as terminal charges. The rates named in the tariffs apply only in the areas embraced in what is termed cartage limits.

In the territory west of Port Arthur cartage tariffs are not issued by the carriers, although in the principal distributing centres a similar service is provided by the large teaming companies operating in connection with the railways, with the exception that the teaming companies themselves issue rate schedules.

We have not as yet made any experiments in the way of replacing our existing way freight services by the utilization of the motor truck operating on highways. We have, however, been watching with considerable interest the development along these lines made by private individuals in conjunction with the movement of supplies for limited distances to and from manufacturing plants and by private trucking concerns. We are also utilizing the motor truck in some of our larger terminals for the transfer of L. C. L. freight to and from connections and between freight sheds. This practice has so far proved both satisfactory and economical.

### Functions of Common Carriers

In considering the question of the adjustment of motor vehicles to the functions of a common carrier, a great many questions come to mind, amongst which might be mentioned:

(1) The attitude of the public so far as the handling of freight is concerned, really resolves itself into a question of the service rendered and the cost of the service, together with the responsibility of the carrier for loss and damage. From the standpoint of the passenger service, however, conditions are somewhat different, as the degree of personal comfort and smooth riding qualities of the steam and electric trains cannot be ordinarily equalled by the motor passenger coach, unless the highway is improved, and this is a factor which has to be taken into consideration.

(2) The second query is in connection with the construction and maintenance of highways. It is necessary to have specially built and adequately maintained highways to properly accommodate any large development in the use of the motor truck and a large body of opinion rather holds the view that the motor truck destroys public highways to a large extent without a corresponding contribution towards their maintenance. Unquestionably, any substantial increase in the use of the motor truck on highways would necessitate the design and maintenance of those highways to adequately meet the traffic requirements.

(3) The third point is the extent to which the motor vehicle as a transportation facility should be subjected to public regulation. I think there can be no question that regulation of traffic and of size, weight and speed of motor vehicles by public bodies, having control, should be as uniform as possible and that regulation of common carrier operations of motor vehicles, including rate regulation, should be handled by the same public bodies which now control the operations of rail carriers and that all comparable features should be similarly treated.

(4) In any possible substitution of motor vehicles for railway requirements, the question naturally arises as to who shall operate the motor vehicle, that is to say, should the operation be done by the railway organization or by a separate organization? Opinions appear to differ on this point and a good deal may be said for and against. Undoubtedly, there are certain conditions under which it would be more profitable for the railway to operate the motor vehicles itself. On the other hand, there are conditions under which it would be undoubtedly more advantageous to have the motor vehicle operation handled by an outside concern.

One thing is certain, however—if motor transport is to be a substantial factor, it must be placed on a sound financial basis, so as to ensure to the public continuity and reliability of service. Whether this can best be done as a department of the railways, or by a separate and individual organization, working in close conjunction with the railways, I am not prepared to say.

Finally, I desire to say, Mr. Chairman, that in general I subscribe to the conclusions reached by the Special Committee No. 4 appointed by the president of the Chamber of Commerce of the United States as contained in their last report issued in November last.

### Conclusions

If any discussion such as this is to be constructive in character, it is essential that conclusions should be thrown into bold relief for the purpose of focusing subsequent argument. Therefore, I venture to place before you the following summary in the hope that it may furnish a fruitful field for constructive argument.

1. Motor propelled vehicles promise to become economical adjuncts to the services performed by railway companies, both on their own lines and on the highways, and an important and useful field exists for further investigation in this direction.

2. The attitude of the railway companies toward motor transportation as it is generally and broadly known should not be hostile, but an effort should be made to harmonize both with the object of providing to the community a constantly improving transportation service.

3. The constantly increasing volume and weight of motor vehicles traveling upon the highway demands a roadbed of more permanent character and the provision of some form of assessment in some measure proportionate to the use made of the highway.

4. Since motor transport is likely to play a constantly increasing part in the welfare and economic life of the community, companies engaged in the industry will sooner or later have to contemplate the same degree of regulation with respect to services and charges as is now imposed upon other common carriers.

# Prince Edward Island Kept Autos Out Up to Twelve Years Ago

Prince Edward Island has had an interesting past, one of the outstanding features of which was its steady refusal, until 12 years ago to allow the auto to enter. At one time, after running a few years, they were ousted altogether. The island's original name was Abegweit (Home on the wave) and it was later named by Champlain, Isle de St. Jean, subsequently receiving its present title after the Duke of Kent, father of Queen Victoria. It was owned by the French prior to 1758, when Great Britain annexed it as a colony. In 1755 many Acadians expelled from Nova Scotia came here.

In 1767 Great Britain parcelled out the Island to British officers and others on a guarantee to settle the island. For over a century the islanders remained tenants to absentee landlords. When the province joined the Canadian Confederation in 1873 the Dominion government paid $800,000 to the provincial government to buy out the landlords. Of the 803,981 acres thus acquired, practically all has been sold to tenants as freehold, at from twenty-five cents to one dollar per acre.

With the inception of the automobile, the farmers fought against its coming to the island, and the first few brought over were restricted to such an extent as to have no association with convenience or comfort. Finally in 1909 there was an order issued to discontinue use of autos on the island altogether.

This situation continued until the spring of 1912, when a new government came into power, with the result that the old order was rescinded and the automobile came into use again, this time to meet more determined opposition than ever from the parties who were still fighting against it. When the 1912 permit was issued, it was with restrictive clauses; namely, that no auto was allowed outside of any town or village on Tuesdays and Fridays, as these were, and still are, the two market days of the week. This restriction was allowed for the reason that at the sight of an auto an island horse was expected to become unmanageable and run away, with serious result. Another regulation was that no automobile could be operated on Sunday between the hours of seven and nine in the evening, as these were considered church hours.

These restrictions continued for some time, and where a certain road was closed to the automobile a canvass had to be made of all the farmers on that particular road and the decision of the majority was final. This condition existed until the autumn of 1919 when the then premier opened up all roads and removed all restrictions prior to the time his party went out of power. Since that day there has been a steady and increasing demand for the automobile. To-day there are approximately 2,500 motor cars operating on Prince Edward Island and the saturation point is not yet attained.

Automobiles do not provide the sole outlet for petroleum products on the island. Prince Edward Island is often called "The Million Acre Farm" and farming is one of its chief industries. The old methods of farming have given place here, as in other parts of Canada, to the most modern machinery and practice. There are about sixty tractors in use.

The fishing industry is second only to agriculture, and here again Imperial products find a good market. An idea of the volume of business done by the fishermen may be gained in knowing that the annual lobster haul alone exceeds $1,600,000.

Unfortunately, the population of Prince Edward Island is not increasing, but the inhabitants have helped materially to increase the population of sister provinces in the Dominion and to swell the farms and cities of many States in the republic to the south.

# TRUCKS REPLACE PENN. RY. TRAINS FOR SHORT HAULS

## Better Adapted to Carriage of Small Station to Station Freight

The use of motor trucks in the handling of short-distance package or less-than-carload freight has been developed on the Pennsylvania Railroad System to the point where at the present time upward of thirty routes are in operation. Most of these are centred in the suburban zones around the cities of Pittsburgh and Philadelphia, and to some extent also on the Eastern shore of Maryland. The purpose has been to relieve the company's rail lines from the performance of what is essentially trucking work, and in that manner not only increase the efficiency of the service, but also permit important economies to be effected, and release railroad equipment for use in the longer hauls and for heavier shipments.

The Pennsylvania Railroad has been a pioneer in the development of this work, making its start about a year ago. The extension of the trucking service to its present dimensions has been accomplished practically within twelve months. The officials of the road are confident that it can be further developed to advantage. To this end various studies are being carried out at a number of different points to determine whether the substitution of trucks for package and local freights can be effected to advantage under varying conditions.

An installation which has been placed in successful operation between Philadelphia and Wilmington, Delaware, is typical of the methods employed. The distance from Paschall Street freight station, at the extreme southwestern end of Philadelphia to Wilmington is twenty-three miles, and the railroad's right of way is closely paralleled by a modern highway. For a number of years in the past it had been the custom to operate two package freight trains daily over this line, one in each direction. These trains performed all the local service in the intermediate territory, taking up and laying down packages and other small shipments from station to station along the line, as required.

### Motor Trucks for Small Loads

By an arrangement made between the railroad company and an independent trucking enterprise, two motor trucks now perform all the local freight service formerly rendered by these two trains. The trucks go from station to station and pick up and put down the various parcels and shipments exactly as did the freight trains. As far as shippers are concerned there is no change in the arrangement, except that it has been found that the trucks are capable of rendering expedited and more regular service. The shipper delivers his package or shipment to the station agent, as heretofore, and the consignee receives it from the agent at the station of destination, precisely as when the haul was performed by train. All shipments in carloads, or in lots of 10,000 pounds or over, continue to be handled by freight train service, as heretofore. The arrangement with the trucks has merely relieved the railroad of the light weight, short distance traffic, which is essentially a good trucking service.

The development of the modern highways and the efficiency of present-day trucks, which enable vehicles of this character to cover 50 or 60 miles daily, making 20 to 30 stops, and handling a total of 20,000 to 25,000 pounds of freight, have rendered this new method of transporting less-than-carload short-distance freight practicable.

While each route has its own local peculiarities, the principles involved and the general arrangements are in the main substantially the same as those in effect between Wilmington and Philadelphia. The saving in the cost of operation results from the fact that the expenses of truck movement are considerably lower than those of the freight trains and crews which they displace. What is perhaps of greater importance is that the latter are now available to play their part in the heavy freight movement of the country, handling the more bulky shipments over longer hauls. These are forms of service for which, in the opinion of the Pennsylvania system management, the railroads are, and doubtless will continue to be, much better adapted than motor vehicles moving on the public highways.

Elisha Lee, vice-president in charge of operation, of the Pennsylvania System, holds the view that the chief problems in regard to the handling of freight, as between railroads and motor vehicles, are not those of competition, but rather of co-ordination. According to Mr. Lee:

"The part of the motor vehicle is not to do what railroads are already fitted and equipped to do with full success and satisfaction; it is to do what the railroads are not able to do at all, or else do only with difficulty and imperfect success.

"Such profits as the railroads are able to make at all come practically altogether from the mass transportation of freight and passengers over at least considerable distances—in other words, from what we may term the 'wholesale' departments of transportation. This is just the form of service in which experience shows that trucks cannot consistently earn real profits. On the other hand, those forms in which trucks can and do make money are almost invariably the strictly 'retail' forms, in the rendering of which railroad operation practically always involves losses, and sometimes very heavy ones."

# Trucks Take Short Hauls From Railway

The proposal recently made by the Boston and Maine Railroad to abandon 1,000 miles of its 2,400 miles of roadbed on account of competition from motor trucks is often quoted of late to emphasize the seriousness of this competition in general. It should be pointed out, however, that the particular piece of road affected at present handles only three per cent. of the company's total traffic, and is a losing part of the road. At the same time, the proposal is significant of a radical change which is taking place, or is about to come shortly, in many parts both of Canada and of the United States.

The areas now nominally served by the lines of railway which it is proposed to abandon are thickly settled and are dotted with towns and villages, supported mainly by factories and small farms. The raw materials and finished products which constitute the bulk of the commodities handled by and for the mills and factories are moved the comparatively short distances necessary by motor trucks. Experience has shown that this method is most economical, both in time and in expense. A great deal of duplication in hauls is eliminated, and, in addition, heavy loads are carried shorter distances. The solution suggested is believed to be in the best interests of the railway concerned, and it is possible that the part of the line which is now in the profit-making class will become more remunerative with the change. The motor lines will act as feeders in the case of long hauls.

The case of the Boston and Maine thus illustrates the view generally held that the competition of motor trucks with the railways will gradually develop into co-operation rather than competition.

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# Good Roads Pay for Expense Tests With Concrete Show

### Saving in Gasoline, Maintenance and Tires Reach Into Large Sums Where Traffic is at All Heavy—Concrete Has Gone Ahead More Rapidly in United States Than Here

Canada has about 850 miles of concrete highways. In the United States some 35,000 miles of concrete roadway has been built. It is apparent, then, that Canada has not yet taken up concrete for highway construction as have the communities across the border line. A similar condition prevails regarding other classes of material for more permanent roads. Canada, because of sparser population, less prosperity and greater public indifference, has lagged behind the United States in many phases of good roads development.

Concrete plays an important part in road-building, and it is anticipated that its use in the construction of arteries of inter-urban commerce will become even more important.

In the first place what is concrete?

Concrete is a combination of clean, sharp sand, crushed stone or pebbles and portland cement, mixed with water in definite proportons and allowed to harden. The cement is generally made from certain kinds of stone and shale or clay, crushed and ground very finely, then burned in a kiln to drive off the water and practically fuse the ingredients. It comes from the kiln in the form of a hard vitreous "clinker," which, when ground, becomes cement. The manufacture of cement is conducted under the watchful care of expert chemists. Add water to the cement, and it hardens into stone again. When sand and crushed stone, or pebbles, are mixed with cement and water, the mass will harden into what is called concrete, or an artificial stone. Before concrete begins to harden, it is a plastic mass which can be formed into any desired shape. To make a pavement, the plastic concrete is spread upon the prepared roadbed to a depth not less than seven inches or more if required by special conditions, finished to an even surface, and allowed to harden. In this way the roadbed is "armored" with a rigid unyielding slab of enduring stone—and you have a concrete road.

**First Cost is High**

Road builders do not question the advisability of adapting concrete to road construction. The rigidity, permanence and efficiency of the concrete highway has been proven in exhaustive investigations. The economy of up-keep and the economy of cost over the life of the road is equally apparent from results in Canada and the United States. The experiment of the Toronto-Hamilton Highway has shown that concrete highways are worth-while.

The chief reason that concrete has not been more widely adopted in Canada lies in the question of first cost. Rushing forward to give Canada as many miles of "good" roads yearly as possible and with the limited resources made available to construction departments by the provinces and other public spending bodies, we have not invested for permanency. Whether or not, the policy will, in the long run, prove to have been best remains to be seen. Expediency has dictated our road-building policies to some extent. Perhaps, when we have learned to finance more scientifically our road-construction so as to capitalize in advance and borrow upon the "earning power" of an improved highway, we shall hesitate less to invest in the more permanent, concrete highways required.

An interesting feature of the concrete highway is that it saves the ultimate user, the operator of an automobile or motor truck, a great deal through reduced gasoline bills and depreciation. A gallon of gasoline carries a motor vehicle twice as far on concrete road as on a dirt road, and one-third farther than on gravel. Thus the all-round economy of good roads goes a long way toward paying for the greater initial investment.

**Mileage Obtained Better**

Studies made by one of the largest manufacturers of motor trucks confirm this statement. Five 2-ton trucks were used and repeated runs were made with capacity load over various sections of paved and unpaved roads. The average mileage obtained per gallon of gasoline consumed, on the various types of road surfaces is summarized in the following table:

| | |
|---|---|
| Earth ..... | 5.78 miles per gal. |
| Fair gravel | 7.19 miles per gal. |
| Good gravel | 9.39 miles per gal. |
| Concrete .. | 11.78 miles per gal. |

It will be seen then that the community receives full value for its investment in the better types of roads, from good gravel to concrete, with the saving increasing with the increase in the firmness and surface quality of the road.

One reason for the gasoline economy of concrete is the small resistance it offers. There is bound to be saving in power and fuel. There are substantial savings too in all types of improved highways. Tests made under excellent and independent authority have shown the following comparison of the pull in pounds per ton required to move traffic over various types of roads.

| | |
|---|---|
| Level, unsurfaced concrete | 27.6 |
| Gravel road ............. | 78.2 |
| Earth road, dust ......... | 92 |
| Earth road, stiff mud.... | 218 |
| Loose gravel ............ | 263 |

**Heavy Traffic Justifies It**

Cement investigators declare that where traffic exceeds 500 vehicles per day on a road, the saving between a poor road and a concrete road justifies the concrete surface. Thus in quiet stretches of highway the total savings effected by concrete are not enough to justify the expenditure on the ground of maintenance cost and fuel and other costs. But most roads running between important communities have well over 500 vehicles a day using them. The Toronto-Hamilton Highway, one of the busiest roads in Canada, has had as many as 16,000 vehicles traveling on it in one day. The average would probably be at least half that. The actual saving in fuel, power, maintenance and similar charges as between the present concrete highway between Toronto and Hamilton and the best gravel road would be many thousands of dollars yearly for each mile of road.

Here for instance, are figures arrived at by actual test. The table shows the average total annual cost of transportation in dollars, per mile. It is assumed that 90 per cent, of vehicles are automobiles, 5 per cent. pneumatic tired trucks and 5 per cent. solid tired trucks. The total cost of highway transport is obtained by combining the cost of vehicle operation per ton-mile with the cost of the highway itself per ton-mile for the traffic passing over it. This table includes interest, maintenance and operating costs for both vehicles and road surfaces.

**Cost of Transportation**

| No. of Vehicles Per day | Average Concrete | Best Gravel |
|---|---|---|
| 100 | $ 5,760 | $ 5,190 |
| 250 | 11,840 | 11,780 |

**Where Traffic is Denser**

It will be noted that in these two examples the cost of transportation is cheaper on gravel roads. But let us consider roads where the traffic is denser. Here are similar figures for a large number of vehicles daily:

**Cost of Transportation**

| No. of Vehicles Per day | Average Concrete | Best Gravel |
|---|---|---|
| 500 | $ 21,980 | $ 22,800 |
| 750 | 32,130 | 33,800 |
| 1,000 | 42,310 | 44,900 |
| 1,500 | 58,630 | 66,950 |
| 2,500 | 103,070 | 110,980 |

This saving is partially due to the saving in gasoline referred to above, and concerning which figures have been presented. It is also partially due to the saving in the average maintenance costs.

Canadian figures in this point are difficult to get, but United States results will indicate the trend. The average annual maintenance costs per mile of road figure out as follows between concrete and gravel:

**Annual Maintenance Per Mile**

| No. of Vehicles Per day | Concrete | Gravel |
|---|---|---|
| Less than 500 | $ 62 | $584 |
| 500-1,000 | 54 | 721 |
| 1,000-2,000 | 76 | 675 |
| Over 2,000 | 149 | 824 |

It will readily be seen that the saving in maintenance charges will pay interest on a goodly proportion of the larger bond issue that has to be made to pay the larger cost of the best road.

**Must be Long-Term Financing**

No extensive road improvement in any community can ordinarily be carried on without more money than can be raised by direct taxation. An 18 ft. concrete road in the U. S. costs some $40,000 a mile to build; a 9 foot concrete road costs $23,000 per mile, and even 18 foot gravel road costs $6,000 a mile. In Canada the figures may be taken as lower. The taxpayers to-day cannot be asked to assume the total cost of an improvement which is going to last into the next generation; therefore bond issues are made to raise the money required to finance the building of permanent roads. The ultimate cost to the taxpayer is going to be felt in his annual charges for interest, sinking fund and, maintenance. If the total of these annual payments can be shown to be less than the total of similar payments for poor roads, then the taxpayer is not going to object to the expenditure, regardless of the amount originally required to be raised.

A large amount of concrete paving has been laid on the inter-urban arteries of the United States. Over 60,000,000 square yards of concrete was laid in the United States in 1924 alone; in highways, in addition to over 40,000,000 yards laid for alleys and streets. This figure for one year compares with a total of 10,000,000 yards, which represents approximately the total concrete roads in Canada. Canada has to-day under 1,000 miles of concrete highway; the United States about 35,000 miles. While frost conditions, etc., have played their part in keeping down the Canadian total, the real reason is that Canada has been spending most of its money on second-rate roads, counting—and perhaps necessarily so under the stress of financial conditions—more on the first cost than ultimate cost.

A factor not yet touched on that enters into discussion of highways costs is the increment in land values that results from good roads construction. Roughly speaking the Toronto-Hamilton Highway cost under $1,500,000. Assessment values increased some $6,000,000 as a result of its construction. Assessment values may be taken as a conservative measure of the minimum appreciation in land values that followed the completion of this highway.

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**MOTOR LICENSES IN QUEBEC**

MONTREAL, Que. — It is expected that about seventy-five thousand automobile licenses and plates will be issued during the next few weeks by the provincial government.

## MOTOR CAR HAS USHERED IN NEW ROADMAKING ERA

(Continued from page 17)

Highways' Act, 1919, by means of which the Dominion contributes 40 per cent. towards the cost of construction of certain specified roads. Apart from the assistance received from the Dominion government, all of the roads of British Columbia have been constructed out of two sources: General revenue, into which motor license fees and gasoline taxes are paid, and from highway loans.

Quebec divides her roads into provincial, regional, and municipal roads. At the beginning of 1925 the Roads Department had under its care 1,679 miles of provincial and regional highways. The department maintains nearly all improved sections of main highways, except in certain towns exceeding 5,000 inhabitants and on certain unfinished arteries. In addition, many municipalities applied to the department to take care of their roads and 600 miles of improved municipal roads came under this plan. The balance of the mileage is looked after directly by the municipalities themselves from taxes collected for the purpose.

In New Brunswick the provincial government bears all the expense put into highways in the province, either maintenance or capital. The municipalities as such are not called upon to bear any proportion of the cost. There is a tax of 40 cents per one hundred dollar valuation placed on property within the province, outside of incorporated cities, which is collected by the province and used for maintenance work. There is also a special sum set aside each year from the ordinary revenue for the maintenance of secondary and by-roads in rural districts. The interest and sinking funds on this expenditure are a direct charge on the revenue of the province. Funds are provided for the secondary roads by an automobile bonding system. Automobile fees which are collected are set aside for the sole purpose of providing interest and sinking funds on a bond issue to be used on the construction of high-class gravel roads with permanent structures on the more important secondary and farm district roads. The expenditure of this type of road is limited to the capacity of the automobile fees to provide sinking funds and interest.

In the province of Ontario, some of the township roads are built and maintained by statute labor, while others are built by township levy with a grant of 30 per cent. from the department of highways. County roads are built by the counties with a grant of 40 per cent. from the department if the work is as specified by the department. There are also provincial county roads and county suburban roads, the expense of which is shared by the department and the cities respectively. The provincial roads are built and repaired by the department, which pays 80 per cent. of the cost, the balance being contributed by the county served. With Ontario, as with the other provinces referred to, the funds contributed are raised by the ordinary methods of taxation.

**Sinking Fund Requirements**

In the case of funds borrowed for the purpose of financing either road construction or maintenance, it is the normal practice to establish sinking funds for the purpose of paying off the bonds. A few examples will illustrate this. In the case of New Brunswick, as indicated above, there is a fund set aside each year for the building and repair of bridges. Funds for capital expenditure on bridges are provided from a direct bond issue on the province, interest and sinking fund for which is provided from the revenue of the province. In Ontario, provision is made for the setting aside each year of a sum from the consolidated revenue fund for the purpose of highway improvement. In the case that bonds are issued to raise this fund, the Motor Vehicles Act requires the deduction of an amount sufficient to provide for sinking fund and interest. The province of Quebec has provided for the creation of an adequate sinking fund for the redemption of loans authorized under the act governing the financing of road construction and maintenance.

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## Motor Transport Forces Navigation Company Out

It was recently announced that the White Star Navigation Company, the second oldest and largest of the Great Lakes transportation companies has put up for sale all of its steamers with the exception of one, as well as practically all of its water frontage. The company has announced that it is withdrawing from all freight and passenger service, with the exception of that carried on by the one boat remaining. The reason given by the general manager of the company was the passage of the LaFollette Seamen's bill and the use of motor trucks, automobiles and buses.

Going into details, the general manager, C. F. Bielman, explained that the cheap motor car is ruining the pleasure boat business. Furthermore, the use of trucks is in direct competition with the steamship companies in many cases in the hauling of light freight across country, and the passenger bus has also made inroads into the profits of the steamships in many parts. Altogether, the general improvement in the roads system of the United States and Canada has made it possible to make many trips both for pleasure and business, which the lake boats formerly have had as more or less of a monopoly.


# A Request for Co-operation

## Made by the Department of Public Highways

UT INCEPIT FIDELIS SIC PERMANET

ONTARIO

*An advertisement issued by the Ontario Department of Highways to secure the co-operation of motorists and truck drivers, Automobile Clubs, Good Roads Associations and all other public spirited bodies, in abating the abuse of the roads of the Province. The Hon. George S. Henry, Minister; S. L. Squire, Deputy Minister.*

THE highways of the Province represent an investment within the last 10 years of over $160,000,000.

Whether constructed entirely through the Government of the Province, or partly through the Government and partly through the counties or townships, it is the people who have paid for these roads. It is the people's money which will be used to maintain them.

Abuses which do the greatest damage are the overloading of trucks and the driving of trucks and passenger cars at inordinate speeds. Even a light vehicle does damage if driven too rapidly, but the damage is much greater if the load is heavy, even if the speed is less.

It is the duty of the people to see that their property is not abused. Mr. Taxpayer, this is important to you.

### What the public can do

To conserve this public property, The Highways Act provides against overloading of vehicles and driving at excessive speeds.

To secure voluntary co-operation of users of the roads, the Highways Department proposes to place before the people, through the columns of the press, the reasons why regulation of the use of the road is in the interest of the motorist and the public generally. To this effort it invites the assistance and co-operation of motorists and truck owners, Automobile and Good Roads Associations, and all other bodies and individuals who take an intelligent interest in public affairs.

### Don't overload now

At this season of the year the foundations of even the hard-surfaced roads are "churned up" by heavy loads, and disintegration follows. The roads which are not hard-surfaced are in a porous or soft condition, and fast driving and heavy loads are especially destructive.

The law provides that during March and April trucks (outside cities and towns) "shall not be loaded in excess of one-half the carrying capacity of such vehicle as registered with the Department, without obtaining a permit as provided in Section 31."

Compliance with the law is urged on all drivers and owners, but while co-operation is requested in the public interest, notice is given here that infractions of the law will be dealt with vigorously.

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# CONSTANT LAG IN AVAILABLE SUPPLY OF AUTOMOBILES

## Competition Assures Perpetual Retreat of Point of Saturation

*Following is part of an address on the probable future trend of the automobile industry delivered recently by Colonel Leonard P. Ayres, and reproduced in the "Cleveland Trust Monthly." While dealing primarily with conditions in the United States, the conclusions arrived at have a bearing on the Canadian industry as well.*
*—Editor.*

A little less than twenty-five years ago I bought an automobile. It was an "Orient." It steered with a handle, and it had a one cylinder motor over the rear axle. You could always tell when the dry battery was producing a good hot spark, because when you went around to the back of the car and leaned down to crank it your ear came in contact with the spark plug.

Since that time we have produced in this country some twenty-four million automobiles, of which more than one million have been exported, nearly six million have worn out, and about seventeen million are now in use. To buy and run these automobiles we have spent more than forty billions of dollars, which is a sum so vast that it is impossible for anyone to realize how great it is.

It is a sum almost twice as great as our military expenditures during the World War. It is almost twice as much as the entire expenditures of our national government from the first administration of George Washington through the first administration of Woodrow Wilson. It is far greater than all the present indebtedness of our national government, our states, and all our municipalities. With that much money our Revolutionary War could have been kept running for 2,000 years at the rate of expenditure which it actually involved. That sum would have restored all the devastated regions of France six times over.

During this quarter of a century the automobile has been getting constantly better, and progressively cheaper, despite the fact that the raw materials entering into it have greatly advanced in cost. This amazing result has been brought about by enormous advances in the efficiency of motor manufacture. When my first car was built the rate of output in automobile and parts factories was equivalent to each workman producing one car in eight months. Now it is equivalent to each worker turning out a car in one month.

In the entire history of industry there is no achievement comparable to that of the American automobile industry for rapidity of expansion, improvement in the quality of product, and advance in the efficiency of operation. Two questions present themselves for answer. The first is: What has been the cause of this amazing development? The second is: Can comparable progress continue in the future?

### Can This Progress Continue?

My own opinion is that the explanation for the insatiable demand for more and better automobiles is to be found in the fact that the automobile is the most inherently competitive article ever manufactured. I do not mean merely that the industry is competitive; I mean that every automobile is always in competition with every other automobile.

Consider the inherent nature of the automobile. The desire to possess one is universal, so people constantly think about it. The cost is considerable, so they give it careful thought. It wears out rather rapidly, so the prospect of getting a new one is never very remote. The old one can always be sold, which makes the possibility of getting a new one appear more reasonable.

If we accept the uniquely competitive character of the automobile as being the controlling factor in its phenomenal popularity, we come to the second question, which is whether the industry can continue to make and market automobiles at the present rate. The answer to this depends on two factors: The first is the number of automobiles that the American people will use at one time, and the second is the average length of service of the cars. I do not at this time consider the export possibilities, because they represent for the present a secondary rather than a primary factor.

My own opinion is that the number of automobiles that this nation will use at one time will tend to be about equal to the number of families in the population. I think that for the great mass of our people the natural unit for automobile ownership is the family, just as that is the natural unit for the possession of bathtubs and domestic telephones, and for fundamentally similar reasons.

Almost every normal family wants one automobile, and will if necessary, sacrifice a good deal to get it, but having secured one, most families will not sacrifice much to purchase two or three. Of course the families that own several machines are many thousand in number, as are the business firms that have delivery cars and trucks, but it is not from these sources that great demand for automobiles has come and must continue to come. That sustaining demand must come in the main from the normal American family which has an average income not much in excess of $2,000 a year.

The number of families in this country is about 27,000,000, and the number of automobiles in use is about 17,000,000, so there are still large opportunities for salesmanship before this margin will have been covered. Included among these families are many thousands that will own more than one automobile, and in addition to these are commercial and industrial firms that will use many more thousands. On the other hand there must be subtracted from these, hundreds of thousands of families that cannot own even a single machine.

### Prospects for 1925

The prospects for the industry in the year that has just begun appear to be distinctly good because it is entirely probable that this year is going to be one of general business prosperity in this country. The influence which has always determined the fortunes of the automobile industry has been, and still is, the general prosperity of the American people.

Over a long series of years periods of sustained prosperity have come in this country when certain fundamental economic forces have been operating in effective balance with one another. Most important among these forces has been the combination of increasing industrial production, farmer prosperity, good export trade, and easy credit conditions. As this new year begins these fundamentals are all effective and well balanced. Industrial output is expanding, farmers are better off than they have been in a long time, export trade is increasing, and credit conditions are easy and sound. Hopes for prosperous general business seem thoroughly justified, and confidence in a good year for the automobile industry seems well founded.

Forecasts of output for the industry in 1925 have been numerous and most diverse. They have ranged from a minimum of 2,500,000 passenger cars and trucks, to a maximum of 5,000,000. My own estimate is that the total output will probably be about 3,600,000.

The year 1925 will mark the completion of the first quarter of the twentieth century. During this period the American automobile industry has achieved an unparalleled record in expansion of output, improvement of product, and reduction of cost. My own belief is that this has been made possible by the inherently competitive nature of the automobile itself.

If my analysis of the situation is correct, the solving of the problem depends on the skill and enterprise of the automotive engineers. If the phenomenal growth of the automobile industry up to this time has resulted from the competitive nature of the product, then its future depends on keeping it competitive. Now there are clearly two sets of qualities of automobiles that make for continuous competitive comparison. The first is the combination of economy and convenience, and in supplying these the Ford has gone so far that it is almost within the bounds of accuracy to say that it has pre-empted the field. The second set of qualities is the combination of appearance and performance, and in this direction there is an open and boundless field.

So long as the automotive engineers can continue to design new machines featuring genuine improvements the normal American citizen will continue to be imbued with intelligent discontent toward his present car, and covetous desire for a new and better one. As long as that keeps on the export market will grow, the problem of the traded-in car will never become quite hopeless, the dreaded saturation point will recede still further into the future, and the industry will continue its triumphant march forward.

# Ottawa Shares Cost of Roads If Department Approves Work

## Government Engineer Inspects All Construction and Maintenance to See That the Type of Work Proposed With Application for Aid Has Been Carried Out

In 1919 the Dominion of Canada appropriated $20,000,000 with which to aid the nine provinces in the necessary work of making over their main trunk highways. This system aggregates, under their original classification of primary highways, 25,000 miles. This mileage was approved by the Department of Railways and Canals for federal aid, as far as money was available. So far 7,700 miles have been placed under agreement with estimates of cost involving $17,700,000 approximately of federal aid. This is 40 per cent. of the actual, necessary and reasonable cost of such work under agreement. The act is administered by the Department of Railways and Canals through a highway commissioner, Mr. A. W. Campbell, M.E.I.C.

All federal aid projects are inspected by an engineer of the department to see that the type of construction proposed with application for aid has been carried out and to enable him to certify that, pursuant to the act, the cost has been reasonable and necessary. At the same time auditors of the department verify the provincial expenditures made in relation to such work in order to enable them to certify that the same have been in accordance with the terms of the regulations which exclude such items from the federal contribution as cost of right-of-way. After such certificates are obtained the federal commission recommends payments of 40 per cent. of the allowable cost to the provinces concerned. Total payments to date amount to about $16,500,000.

In the provinces of Prince Edward Island, Nova Scotia, New Brunswick and British Columbia all roads are under the control of the several provincial governments. Consequently therein, except for the 40 per cent. of federal aid on a limited portion of their total mileage of roads, the entire cost of such work falls on the local government. In the three Maritime Provinces the road tax consists of a direct levy on personal property and income, together with a poll tax, varying from $1 to $3; but the funds so secured are quite insufficient to meet the costs of types of highway construction required there as elsewhere and, accordingly, large capital outlays are being financed by the revenues from registration of motor vehicles, and in the case of Prince Edward Island by a tax on gasoline amounting to two cents per gallon.

### Locally Improved Roads

In Quebec, Ontario and Manitoba, where roads are still under the control of the county, township, parish or rural municipality, the cost of improvement of such roads is borne by a similar direct property levy, less provincial assistance of varying percentage; and in the case of the more distinctly local road is effected through the personal service method. But upon the primary road systems in these provinces finance methods differ. In these three provinces, the entire cost of maintenance of provincial highways is borne by the provincial government; though Ontario collects from the county councils 20 per cent. of such cost. As for construction costs, in Quebec the minister of roads is given wide latitude in making agreements with local authorities as to the amount and method of provincial assistance that may be agreed upon. In Ontario the province has taken over entire control of provincial highways and, after construction, collects 20 per cent. of the cost as determined by it; while in Manitoba control of such highways rests with local authorities and the province subsidizes to the extent of 66-2/3 per cent. of the cost.

In Saskatchewan a provincial highway system of 7,365 miles of main trunk roads being constructed with federal aid is paid for by the province less the 40 per cent. from the Dominion; while the province pays for the entire cost of its maintenance. In addition the province subsidizes rural municipalities in varying lump sums for the improvement of about 25,000 miles of main market roads. With 210,000 miles surveyed road allowance in all to look after, Saskatchewan is rounding out a scientifically built sand-clay and gravel highway system that reflects the highest credit on the provincial government both for its representative character and service presaged. The federal aid system connects at both provincial boundaries with similar arteries in Alberta and Manitoba.

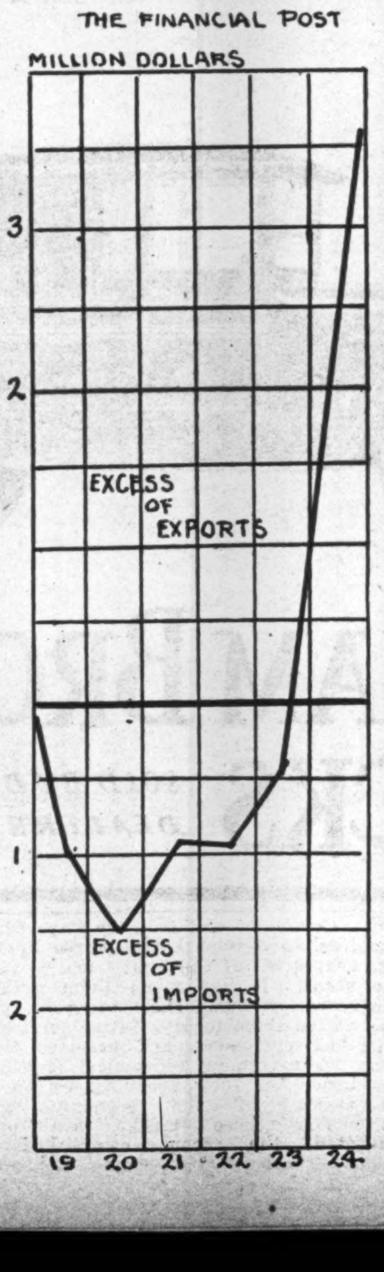
### Alberta Trunk System

Alberta is financing its main trunk system to be built, with Dominion assistance, from debentures to be amortized from a portion of its revenues from registrations of motor vehicles. Rural municipalities receive from the Alberta government aid depending upon the importance of local roads. Legislative appropriations in all provinces from Quebec to British Columbia for local road purposes vary with the general financial standing of these provinces in any given year. Alberta's revenue for road purposes is now being augmented by a two cent tax upon each gallon of gasoline sold to owners of motor vehicles.

In British Columbia a Dominion-provincial highway system of approximately 3,000 miles is being rapidly brought up to the requirements of modern traffic. In this province road work is costly owing to rocky country and the remoteness of labor from where it could be employed. However, there has been constructed across the province a splendid "Trans-provincial Highway" barring a gap between Hope and Princeton, that is in places a marvel of engineering location. This highway is being eulogized by an increasing number of motor users coming to enjoy, in part, British Columbia's famed mountain scenery. Then the Pacific Highway, running from Vancouver to San Francisco, as far as it lies in British Columbia has now been completed to a high standard with cement concrete, and bituminous concrete; and, as was expected, is now the medium by which thousands of tourists are reaching Vancouver and points inland.

The federal government does not exercise the right, as to the existence of which opinions vary, of regulating motor traffic that is inter-provincial in character. Consequently, there is no tax of any kind levied by the federal government for the use of any road in any province, other than upon transients in Canadian National parks.

**Balance of Trade in Motor Trucks**




# ACTIVE DEMAND FOR OUR TRUCKS ABROAD

## Australia and New Zealand Are Best Customers For Canadian Commercial Vehicles

According to figures recently compiled by the United States Bureau of Commerce, the United States and Canada during January produced 28,004 trucks, the former 26,464, and the latter 1,540. This is somewhat below the average monthly output for 1924, which was 31,285, and also considerably below the 1923 average. Following is a statement of the truck production figures for the two countries by months during 1924:

| | Number of Trucks | | |
|---|---|---|---|
| 1924 | Total | U. S. | Canada |
| Jan. | 30,627 | 28,902 | 1,725 |
| Feb. | 32,756 | 31,101 | 1,655 |
| Mar. | 36,270 | 34,263 | 2,007 |
| Apr. | 37,766 | 35,866 | 1,900 |
| May | 35,112 | 33,401 | 1.711 |
| June | 28,884 | 27,972 | 912 |
| July | 26,227 | 25,157 | 1,070 |
| Aug. | 28,503 | 27,646 | 858 |
| Sept. | 31,829 | 30,507 | 1,323 |
| *Oct. | 32,332 | 31,094 | 1,239 |
| Nov. | 27,766 | 26.707 | 1,960 |
| Dec. | 27,324 | 25,680 | 1,670 |
| Total | 375,426 | 358,296 | 17,130 |

In the field of exports, 1924 showed an increase for the United States, but there was a considerable decline in Canada. Over a long period, however, there has been a gradual increase in Canadian commercial automobile exports and a very healthy foreign business has been built up. The following table illustrates the volume and destination of these exports during the last calendar year, and also the number and value of trucks exported from Canada during the past four calendar years:

Trucks Exported, by Countries

| | Number | Value |
|---|---|---|
| Australia | 5,837 | $1,973,905 |
| New Zealand | 1,881 | 664,471 |
| British India | 1,586 | 579,170 |
| United Kingdom | 1,264 | 415.621 |
| Ceylon | 411 | 150,190 |
| British East Africa | 410 | 145.805 |
| Dutch East Indies | 326 | 107.931 |
| Straits Settlements | 308 | 101.015 |
| Siam | 223 | 73.650 |
| British West Africa | 153 | 51.376 |
| All other countries | 373 | 166,027 |
| Total | 12,772 | 4,429,161 |

| | Number | Value |
|---|---|---|
| 1921 | 1,421 | $ 718.780 |
| 1922 | 2,564 | 1,094.519 |
| 1923 | 12,439 | 4,503.659 |
| 1924 | 12,772 | 4,429,161 |

### FREIGHT AUTO EXPORTS

TORONTO. — Freight automobiles exported from Canada during the month of January numbered 1,442, valued at $431,062, compared with 925, worth $317,591, in December, 1924, according to a report made by the Dominion Bureau of Statistics. The cumulative total for the 12 months ending January, 1925, was 12,439, valued at $4,240,863, as against 13,845, worth $4,981,753 in the corresponding period a year ago.

# PARRY SOUND

## Strategically Located for Business

THE town of Parry Sound occupies a peculiarly favorable position as the acknowledged hub of a great district. The town itself has a population of 3,500, but it serves the whole district of which it is the only town, thus affording a clientele of upwards of 26,000 people. In addition to this, there is a very large summer population who take advantage of its great summer advantages. All these people amounting to upwards of 4,000, look to Parry Sound as their natural centre and market.

But Parry Sound has even a wider field, in its splendid transportation facilities, both by land and water, that permit industries located here to reach out economically to farther and larger markets. This fact, coupled with the undeveloped resources of the district, which promise a great future for industries.

### Safeguards and Facilities for Commercial Undertakings

The investor, manufacturer and business man, in Parry Sound will find a sound community backed by substantial natural advantages that offering a special inducement to such manufacturers to locate in a section close to the supply of raw products, where factory sites can be secured at nominal costs; where labor supply is steady, and not subject to disturbing influences; and where distributing facilities are of the best.

In addition to these factors the town maintains its own power supply station, developing ample power for many new industries. This power is available at cost, thus making for cheap operation.

### Unique Transportation Facilities

Parry Sound is peculiarly favored in its transportation facilities. It is the western terminus of the direct line to Montreal and Ottawa giving prompt and economic distribution to the great centres of the East. It is on the main line of the Canadian Pacific and Canadian National Railways to the west, in this way giving direct transportation to the west, and at the same time making Parry Sound a place of unusual strategic advantage for handling the trade of the thriving cities and towns along the shores of the Georgian Bay and Lake Huron, also C. N. R. to North Bay, making connection with T. & N. O. Railway.

Unoccupied water front half mile—deep water front—is the inner harbor—on the best land-locked harbor of the Great Lakes.

It is a deep water port with direct and regular steamship connection by the Chicago, Duluth and Georgian Bay Transit Company, as well as by other steamship lines. It is a distributing point also for the Imperial Oil Company whose tankers unload their shipments for the whole northern country.

The town is a divisional point on the C. N. R. and is also one of the Lighthouse Supply Stations of the Department of Marine and Fisheries.

### Parry Sound

is anxious for new industries, because its people are assured such industries would prosper here, every facility is given, and factory sites are available with first-class rail and water accommodation. There are large deposits of feldspar in the vicinity.

for POWER or SPEED

Tests have proven that the GMC engine, with its Two-Range Transmission, is capable of thirty percent greater pulling power in low range than a similar-sized engine with the regular-type transmission.

You can depend on GMC to move the load when the going is hard—and to speed up all your trucking operations.

There is a type of GMC Truck for every need—from 1 ton to 15 ton.

GENERAL MOTORS TRUCK COMPANY OF CANADA, LIMITED
OSHAWA - ONTARIO
T-93

General Motors Trucks

GMC
PRODUCT OF GENERAL MOTORS

# WILL ADVERTISE TO HELP PROTECT ONTARIO'S ROADS

## Educational Campaign Will Also Assist in Regulation Of Traffic

At the annual dinner of the Ontario Motor League, held in Toronto in February, announcement was made by the Hon. George S. Henry, Minister of Highways, that the department intends this year to employ advertising in daily papers, farm papers and weekly papers with the object of inviting the assistance and co-operation of owners and drivers of motor trucks and passenger cars and of automobile and good roads associations in abating the abuse of the highways of the province by heavy loading and excessive speeds. In brief, the objects of this advertising campaign are to stir up the interest of the public to the desirability of more extended use of the roads so that they may be more familiar with their own province and its highways problems, and may acquire a more emphatic realization of the necessity of avoiding abuse by heavy loading and fast driving of the highways, of which they are the owners.

Positive benefit has come from the use of improved highways as avenues for the quickening of urban and rural relationships. The benefit of a wider acquaintance with the province by a larger number of our people would be none the less real, although perhaps slightly less tangible. Travel is an educator. The first field for travel should be the province and the country in which people live.

The campaign will bring to the notice of the public many beauty spots in Ontario which they do not hear of, and will point out the existence of many miles of improved highways throughout the various counties which may be little known to the average motorist. It will lead many Ontario people to know Ontario better. Becoming more familiar with the extensive mileage of improved highways in the province, the public will gain a greater and more definite understanding of the immensity of the highways problems which are being solved by county and provincial authorities. It will be pointed out that the beauties of scenery can be enjoyed only if the driving is at a moderate rate of speed. The great enemy of the road is water. A broken road surface lets water through to the foundation. Heavy loads break road surfaces and fast driving wears them away.

An opinion which is more or less general among the public is that the Ontario system of highways is hard-surfaced. As a matter of fact, a great proportion of the roads of this province is not of the hard-surfaced variety.

It will be emphasized that the roads belong to the people because they paid for them, and that the motorist of every class will be expected to contribute to the cost of maintenance and repairs. In justice, the class of traffic that bears most heavily on the roads should make the greatest contributions. The co-operation suggested, therefore, not only is in the public interest but in the selfish interest of the individual concerned.

### Help Regulate Traffic Also

A belief is that traffic laws are made only to prevent accident—not to preserve the roads. When no traffic officer is in the vicinity and no danger of accident is apparent, it is not unusual for the motorist to pull out and exceed the speed limit. By repetition and reiteration, the department intends to lay before the public the salient features of our highways' problems and conditions, believing that such abuses as have taken place in the past arise largely from ignorance of conditions. By taking the motoring public into its confidence, and explaining fully the reasons for the law against heavy loading and fast driving, it is believed that the goodwill and support of all users of the roads will be given cheerfully toward the sane and reasonable use of the highways. If accorded in volume, this support will prove even more effective, it is hoped, than the activities of a numerous traffic squad would be.

While the department is spreading this information about highways problems and requesting the co-operation of those who use the highways, it will not omit to reiterate that the penalties of the Highways' Act will not be abated in any particular. Indeed, more strict obedience will be expected in view of the information and warnings which the publicity will carry.

As it is desired to reach every motorist in the province with this advertising, it will appear in an extended list of daily and weekly publications, farm journals, and publications, which are addressed particularly to the motorist. The program will be divided into three parts, spring, summer, and fall. In the spring the advertisements will deal specifically with the overloading and speed of trucks. It will be pointed out that all roads which are not hard-surfaced are "green" and soft during the spring season, and that the restrictions in the use of the roads at this season are designed to preserve them from unnecessary damage. In the summer the advertisements will be addressed to the drivers of passenger cars. There will be invitations to the public to see Ontario. These will be illustrated with sketches of lesser-known beauty spots throughout the province. Effort will not be made to direct tourists particularly to the spots which are illustrated. They will be noted only as samples of Ontario's beauty. In this way local controversy will be avoided. The fall advertisements will be designed to extend the usual touring season by pointing out the beauties of Ontario during the fall. They will contain a special appeal to the farmer who has more leisure at this time of year. These advertisements will be illustrated in the same way as the summer advertisements and will reiterate the necessity for moderate driving.

# TRUCK SUITED TO SHORT HAULS AND TERMINAL WORK

## Is Economic Ally of Steam Train for Light Traffic and for Local Service

That there is a definite place for the motor truck alongside existing transport facilities rather than in competition with them, is pointed out by the National Bank of Commerce of New York in a recent issue of Commerce Monthly. The portion of the article reproduced herewith bears upon the Canadian situation as well as that in the United States.

"The motor truck has nearly displaced the horse-drawn vehicle in many types of short distance hauling. For long-distance transportation the railroads are beyond doubt more economical and excepting under unusual circumstances motor trucks are not able to compete with them in the movement of car-load lot long-haul traffic. There is, however, a field of uncertain extent in which the motor truck may compete with the railroad.

"The ideal relation of the motor truck to the railway is that one should supplement the other. The motor truck may be applied to the solution of railroad problems in the following ways:

(1) As a feeder, either on lines of light traffic, or in territories where the volume of traffic has not heretofore justified the construction of railway branch line feeders.

(2) As a substitute for the railroad in short haul or local service, which frequently is an unprofitable service rendered by the railroads and a drain on profits derived from other sources.

(3) As a solution of terminal problems, reducing or doing away with the movement of freight by car between stations within the same terminal area, and costly switching operations.

(4) The motor bus or the gasoline rail car, literally a modification of the motor bus, may be substituted for the railway passenger train on lines of light passenger traffic.

"Motor trucks used in the establishment of feeder lines in territories formerly not adequately served, or not served at all, by the railroads are a distinct advantage not only to the residents of the districts in which the motor trucks operate, but also to the railroads themselves in that their traffic is increased by greater interchange of goods. The motor truck with a minimum capital outlay can reach into any part of the country served by highways and connect it with the network of railroads already existing. In the future railway feeder lines will be built only where the traffic is so heavy or of such a character as to warrant them, and the abandonment of existing feeder lines which are a drain on the earnings of the railways from other sources is a possibility.

"Closely allied to the application of the motor truck to the solution of the feeder line problems of the railroads is its application to the solution of short-haul and local traffic problems. It has been said that there is usually no profit to a railroad in hauling freight for a distance under forty miles. Most railroads have lines on which local freight traffic is very light or on which the number of stations is large and the volume of traffic handled by each small. Several roads have tried substituting motor trucks for package locals on lines of this character. This plan does not include store-door delivery, but that is a logical completion of the transportation process which may follow in the course of time. Already it is the avowed ultimate aim of some roads.

"The terminal congestion problem is regarded by the railroads of the United States as one of the biggest problems with which they are faced. The substitution of motor trucks for freight cars in movement of goods within terminal areas would release thousands of cars, besides other equipment, for more profitable service and congestion within the terminal area would be relieved. At the same time service would be speeded up.

"The suggestion has been made that in place of the dozen or more freight terminals at present serving each of our large cities, usually in the heart of the city where real estate is most costly and traffic congestion greatest, one or more large terminals should be established on the outskirts of the city, at which incoming freight would be classified and delivered directly by motor truck instead of by switching partly loaded cars to the various freight stations around the city. Whether or not this plan would accomplish all that its protagonists claim, it seems to have possibilities in the way of speeding up the movement of traffic. The nature of the competition between roads in the United States and possibly, also, legislative and regulatory measures, tend to delay or prevent the trial of such methods. Meanwhile discussion is active regarding them.

"Railroad passenger facilities also are being supplemented by the use of gasoline-driven vehicles. Figures recently compiled show that 157 railroads at the beginning of 1924 were using motor coaches in passenger service."

# LIGHT TRUCK HAS REVOLUTIONIZED FARM TRANSPORT

## And Is Invaluable to Many Other Lines of Business

In this mechanical age when Service is the watchword of all progressive business, and prompt shipments and deliveries are essential, the light truck stands out in the field with the percentage of approximately 85 per cent. of all gas transportation vehicles in use in the Dominion.

It is an economical vehicle, and operating and upkeep costs are very low, a fact that can be vouched for by the city of Vancouver. During 1924 the city council decided that if they were to cut the municipal departments' expenses a substantial sum could be saved by securing economically operating trucks.

The innumerable types of bodies make the light truck invaluable to all classes and kinds of business, for the special body equipment ranges from the polished panel woodwork, to suit the florist, to serviceable dump bodies which are ideal for handling a city's garbage. It can now be classed as a recognized common carrier producing excellent results all around.

### Country Benefits Most

The number of trucks to be seen on the city streets is a fair indication of their utility, but it is in the country that they have proved their adaptability to such an extent that they can be said to be numbered in that select class of implements essential to the successful conducting of the farm. Take the case of the Regina farmers whose big problem was the hauling of wheat. Several of these progressive farmers purchased light trucks and attracted the interest of both motor truck manufacturers and other farmers in the district with their experiment. Their brother farmers provided horses for hauling power in the tests, thus supplying the necessary comparative data on horse and wagon operating and upkeep costs. The total change worked by truck users showed that the crops were transported in half the time and cut the expenses considerably. This did not include the extra time they were able to spend on the farm, and the other uses to which the truck was turned, such as sawing wood and generating light. It does not include, either, the return loads usually brought back to the farm from the elevator centre. For example, James Inglis, Stewart Valley, Saskatchewan, north of Swift Current, hauled his whole crop in five weeks at the rate of two loads per day. Had he done his hauling by horses, each load would have taken two days, necessitating a stop overnight in town. His grain hauling under the old conditions would have lasted well through the cold weather, whereas he was through with it in the season when hauling is a pleasure. Emile Garies, of the same post office, is a confirmed power farmer. Since using his trucks and tractors he has disposed of all his horses and two hired men. Mr. Garies' truck has completed ten thousand miles with no expense save gas, oil and tires. He made two round trips daily, each one of 52 miles, using eight gallons of gas and one quart of oil per trip. Similar examples are numerous.

Those engaged in other branches of farming, such as fruit and dairy farming, have also found the low-priced light truck a decided asset, inasmuch as it has made them independent of the buying agents, who, in other years, paid what they thought fit for the farm produce laid down at the country railway depot from the farmers' wagons. With the speedy truck, at a small cost, he has his choice of different markets, and if not satisfied with the market price, can retail his goods in the city. With the continual improvement in roads, it is assured that trucks will multiply in the coming years in rural districts as they have in cities in the past decade.

### Factor in Settlement

Nor have officials who are searching for the best type of agricultural immigrant overlooked the motor truck as an inducement to the prospective farmer. These officials realize that the British agricultural worker belongs to the conservative type and is not over anxious to undertake farming in a locality which, although but a few miles from town or village, to him is the "wide open spaces." This type of prospective immigrant, officials are agreed, who considers every angle of the situation before deciding to undertake the new life, is the type that is urgently required.

It must be remembered that the fathers of these men whom officials are so anxious to bring to Canada had to put up a fight for every fish they took out of the lough—the creatures did not swim in to surrender themselves, nor did the rocks rise up for the plough, or the clouds make way for the sun at the call of the pipes. These men, and their forbears, had a hard row to hoe, and they are just as willing to work in Canada as they are to remain at home. They are not, however, prepared to live in isolated and remote districts.

To the Canadian such an argument is foolish, but to the prospective farmer immigrant it is a very real problem. He is now accustomed to his own "feeing markets," and enjoys some community interest. He has read the propagandist literature distributed in the Old Countray designed to attract capital to Canada and painting a "vast country where big things can be accomplished." The whole proposition, he feels, is too big for him.

But the light truck is explained to him as an economical means of transportation which will bring him into close touch with friendly neighbors; permitting him to market his own products, and generally establishing close contact with brother farmers, who, at the outset, operate on a scale not much more extensive than the market gardener in the Old Country. In the course of time these men will, provided they are given the proper encouragement, branch out into bigger farms, but as a means of overcoming their biggest problem—that of isolation—the light and inexpensive truck is an excellent recruiter.

Commerce and industry have benefited to a remarkable degree by the adaptation of the light truck to their needs. It has given them greater scope, extended their territory, permitted them to give better service to their customers, and provided them with extremely economical transportation for their products. As an instance of the economy with which these trucks are operated, the record established by a lumber tie and pulp-wood dealer is worthy of attention. This dealer's truck made six trips of nine miles each per day, carrying three-quarters of a cord of 16-inch birch and maple block wood, averaging one ton to one and a half tons. A coal merchant ran his truck 224 days, completing 1,066 trips totalling 13,345 miles, on a gas consumption of 1,106 gallons, in transporting 24,830 cwts., and averaging 23.3 cwts. per load, the average daily mileage being 60.

**Gotfredson Trucks and Buses**

Only exceptional performance and endurance could establish the prestige Gotfredson has attained. This leadership is approved and solidified by facts read from fleet owners' actual operating cost records.

Modern passenger coaches in many fine body designs (built by Gotfredson) are operating on most important highways in Canada.

*"Strength, Beauty combined with Comfort and Safety"*

TRUCKS—Capacities 1¼, 1½, 2, 2½, 3 tons.
TAXICAB

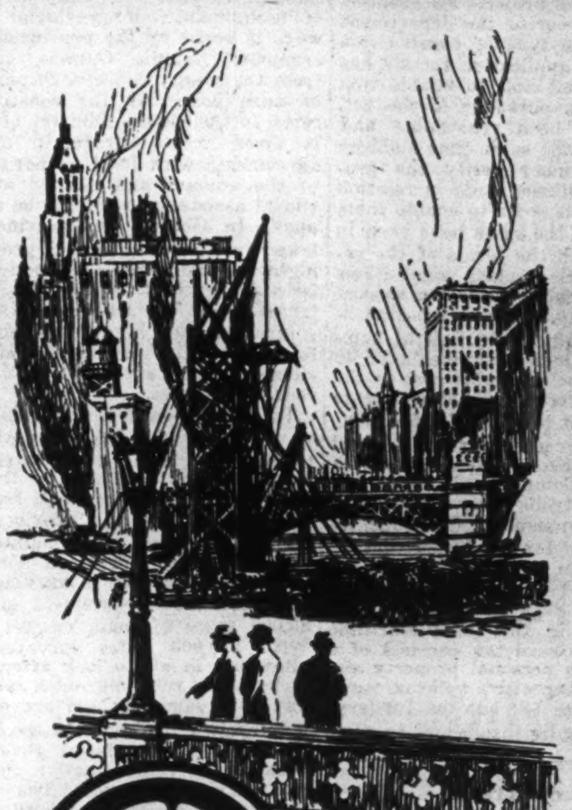
BUSES—Parlor Car, De Luxe Coach, Charabanc, 16 to 29 passengers.

**GOTFREDSON TRUCK CORP. LIMITED**

Walkerville, Canada

BRANCHES — 242 Spadina Ave., Toronto; Montreal, Hamilton, Ottawa, Quebec.





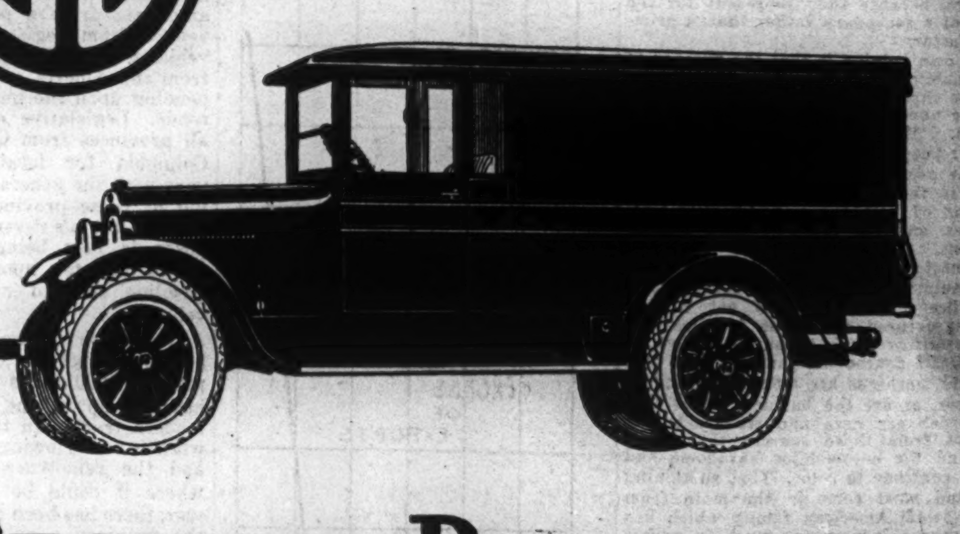
Proof of Merit

Its record in past years, in 343 different lines of business, stands as indisputable proof of exceptional merit.

And this year it is an even better truck than ever before!

GRAHAM BROTHERS (CANADA) LIMITED
Toronto - Ontario
Truck Division of Dodge Brothers (Canada) Limited

GB



**GRAHAM BROTHERS TRUCKS**

*SOLD BY DODGE BROTHERS DEALERS EVERYWHERE*

# Expert Counsel on Your Transportation Problems

ONE of the greatest problems in Canadian industry today is that of transportation. The difficulty of distributing products quickly and at a consistently low ton-mile rate per unit, has been experienced by many. Fortunately, it is by no means an insuperable difficulty. Much more serious has been the problem of providing individual transportation systems combining the features of low investment, low overhead and low ton-mile rate per unit, plus ample capacity for peak production periods and wide flexibility for those occasions that require it.

For the convenience of those executives who realize the vital importance of a properly organized transportation system, the Ford Motor Company of Canada, Limited, is inaugurating a Transportation Engineering Department, the services of which are available, free, upon request.

These services may be secured without charge or obligation of any kind and without regard to the size or location of your business. It is a courtesy service, available to all.

If you feel that your transportation costs might be reduced, or your system made more efficient without increased cost — if you have any transportation problem whatever upon which you would welcome expert counsel, you are invited to ask for a consultation.

## Ford Motor Company of Canada, Limited

**Ford, Ontario**

*The attached coupon is for your convenience.*

### *COUPON*

**Ford Motor Company of Canada, Ltd. - Ford, Ont.**

I am interested in improving our transportation facilities and should be glad to arrange a consultation with your Transportation Engineering Department on or about

Date..........................................

Name..........................................

Position......................................

Address.......................................

# WEST IS GETTING BACK TO A MUCH SOUNDER BASIS

## What One Good Crop Has Helped to Do For Manitoba

From Our Own Correspondent.

WINNIPEG.—Confidence in the future of the Canadian West, both agriculturally and industrially, is expressed by Mr. Willis Argue, president of Western Homes, Ltd., and manager of Argue Bros., Ltd. Mr. Argue has lived in Western Canada since '84, and has worked among its people since he was 15 years of age. He worked on his father's farm until he was 22 and then he went to Winnipeg, which has been his home ever since.

Mr. Argue is not one who believes that business and political separation from the rest of Canada can do the West any good. As he says, "Canada's prosperity is the West's—and vice versa." Nor does he believe that an agricultural West and a manufacturing East is to continue always as now.

"What the West wants to see, and what it will see, is a definite increase within the next few years of the industrial output of large Western centres, especially Winnipeg," he believes. "Already several companies have drawn up plans for the erection of plants in or near Winnipeg. These, I believe, are harbingers of others which will locate within the next decade. It would not surprise me if industry in Winnipeg shows greater growth during the next decade than at any previous time in its history.

"The advent of these new industries is only natural with the increase in population. These new peoples must be clothed and fed, and it seems only right that they should be fed and clothed with products made within their own or neighboring provinces. I do not suggest that entirely new companies do this, but what I think seems equitable and bound to materialize to an even greater extent in the future than in the past, is that Eastern firms will locate Western branches to take care of the Western trade. This would mean more employment for the West."

Speaking generally of business conditions in the West of the past few years and their effect upon the situation of to-day, Mr. Argue says:

"We cannot expect that the depression, affecting as it has a very large portion of the world, will disappear in one year yet 1924 made a very large contribution to a general improvement, and there is very good reason for expecting still further improvement in the future. It is true, we have, in common with the farmers in other countries, suffered under recent depression, and the position of the farmer has been reflected in other avenues of business; but, admitting this, I have never been able, and can not see any justification for discouragement.

"Manitoba, the smallest of the three prairie provinces in cultivated land, has approximately 200 thousand people living on the land. In the past ten years, farmers in this province have produced a gross revenue of 150 million dollars a year, an average gross revenue of $19 per acre. I believe under the new system of diversified and mixed farming now going into operation in Western Canada, land may in a few years produce a revenue of $25 per acre. The overhead will not be increased in proportion and the result will be a larger net revenue. I believe under an improved system in farming conditions, the West may very soon produce an average revenue of two billion dollars. With the promise of immigration being more active and consequently more of our good land being put under cultivation, there is good reason to expect a greater revenue from agriculture within a few years. But, although our land is capable of producing the largest yield per acre of the best quality of grain in the world, we must admit that the past four years have been difficult years for the farmers in Western Canada. In 1924, our farmers could be divided into three classes:

### The Situation To-day

"(1) Farmers who were fortunate enough to be free from liability when the depression started, and, by exercising good judgment and careful supervision, met changing conditions successfully and who, by practising economy, were able to proceed, without using their credit. These men are now in a position to profit to the fullest extent by the improved conditions this year, and will enjoy the greater prosperity promised throughout Western Canada.

"(2) Those having fairly heavy obligations, whose burdens were made heavier on account of unfavorable farming conditions, but who, with faith in the future of this country and in their profession, which did not waver under the recent depression, preferred to continue business, and were able to proceed with help of loan companies. This year, the majority of them, except in districts affected by frost, have succeeded in repaying all of the money advanced for seed, operating expenses, arrears of taxes and interest, and many of them have paid a substantial sum on principal account.

"(3) Those who became discouraged and decided to quit. Their farms were handed over to the mortgagees and their personal effects, stock and equipment were sacrificed. They went elsewhere. The majority of these men found that the country which looked so promising from a distance, had its disadvantages too, the prosperity which they expected to find did not result. They very soon decided that they had made a mistake, and began to make plans for their return. Some of them have succeeded in getting back to this country, and are now in the position they were in when they started farming some years ago.

"Mortgage loan companies could tell an interesting story of their experiences in the past four years. In many cases, farmers would gladly have transferred their lands to the mortgagees, but, by co-operating with them, extending time for payment of interest, advancing funds for seed grain, taxes, and, in some cases, helping to finance their current expenses, they were encouraged to continue with the promise that their position would eventually improve. The result is that the majority of these men, except in districts affected by frost, have this year succeeded in paying back the money advanced by the mortgagees, and considerable on principal account."

## Should Base Capacity Of Bus on Average Load

In the opinion of H. T. Thomas, vice-president and chief engineer of the Reo Motor Car Company, certain considerations are essential in the choosing and operation of motor buses to assure success and profits. Mr. Thomas says:

"The first and most important of the laws which have come to govern all well-conducted bus lines we know as the Law of the Average Load. It explains the losses of the operator owning the very large, very luxurious bus, and the profits made with the smaller, less impressive equipment. It warns the operator to buy capacity to suit the average load carried during the entire day, not the peak load carried once a day.

"It is necessary for each operator to gauge his own average load. In the downtown sections of the very large cities, buses of the very greatest capacity may be required. We have found, however, that in the great majority of instances, it is the 20 or 21 passenger bus for city use and the bus of slightly smaller capacity for intercity work that fulfil this law.

"The matter of frequency is a factor requiring close attention, too. Frequency is the essence of service from the standpoint of the public. The average bus patron doesn't care whether his seat is one of 20 or one of 40 in the bus, as long as he has a seat and hasn't had to wait half an hour for the bus to come along.

"From the standpoint of the operator, one of the most important factors in the selection of equipment is investment per seat. There is nothing else about the bus that pays returns, and accordingly the entire cost must be divided into investment per seat. The lower this investment per seat can be held without sacrificing quality that makes for long life and continuous operation, the sooner each day the operator will write off his overhead and begin to show profits.

"A few years ago an operator had little to guide him in buying a bus but the appearance of the bus itself. Now he can buy with his eyes open, and can conduct a business from which the element of chance has been almost entirely removed. This more satisfactory condition can be credited, in my opinion, to the tendency now evident among the more responsible and stable manufacturers to build with the needs of the operator in mind, and not with the thought of selling him a lot of non-essentials that pay no dividends, but do eat up profits."

### LIGNITE PRODUCTION

BIENFAIT, Sask.—The output of lignite from Saskatchewan mines for 1924 was approximately 463,128 tons, according to an estimate of the commissioner of labor and industries. Final returns have not yet been compiled, but it is expected that the 1924 production will exceed that of 1923 by about 30,000 tons.

## Loans and Assets of Banks Showed Decline in January

There are a number of marked changes in the finances of Canadian banks as shown in the government return for January. Incidentally it may be pointed out that this statement marks the disappearance of the Molsons and Sterling Banks and the reduction of the number of chartered institutions reporting to twelve whereas a year ago it was fifteen. The Bank of Hamilton was the other institution which has been absorbed in the interval.

It is usual during the month of January to find a curtailment in the assets of the banks under such items as current loans and liabilities under demand deposits, but not to such a great extent as shown this year. The reduction in gross assets was over $126,000,000 for which the curtailment of current loans amounted to over $28,000,000. There were important reductions also in Canadian call loans, provincial loans, gold reserve and holdings of Dominion notes, while deposits with foreign banks were materially reduced. At the same time there was an increase of over $18,000,000 in loans abroad, over $5,500,000 in municipal loans and nearly $18,000,000 in call loans abroad while investment in government securities increased by more than $8,000,000.

The reduction of demand deposits was over $92,500,000 but there was an increase of over $12,000,000 in savings deposits. Circulation was reduced by more than $10,000,000 while there were considerable reductions also in the deposits of Dominion and provincial governments and in government advances to the banks.

Savings deposits are now more than $65,000,000 above the level of a year ago, while demand deposits are nearly $14,000,000 less, and foreign deposits nearly $39,000,000 greater.

**BANK STATEMENT FOR MONTH OF JANUARY**

**Immediately Available Liquid Resources**

| ASSETS | January 1925 | December 1924 | Change | January 1924 | Change |
|---|---|---|---|---|---|
| Specie | $ 56,981,590 | $ 56,937,426+ | 44,164 | $ 57,913,239— | $ 931,649 |
| Dom. Notes | 158,724,307 | 182,188,169— | 23,463,862 | 169,987,738— | 11,263,431 |
| Gold Res. | 43,652,533 | 60,702,533— | 17,050,000 | 44,852,533— | 1,200,000 |
| U.K. Banks | 7,107,138 | 9,268,969— | 2,161,831 | 7,888,723— | 781,585 |
| For. Banks | 51,752,770 | 70,034,229— | 18,281,459 | 50,963,075+ | 789,695 |
| For. Curr. | 26,374,523 | 29,347,286— | 2,972,763 | 29,634,142— | 3,259,619 |
| Gov. Secs. | 332,487,826 | 324,471,543+ | 8,016,283 | 267,096,156+ | 65,391,670 |
| Call Loans, Abd. | 204,956,791 | 187,223,100+ | 17,733,691 | 182,019,643+ | 22,937,148 |
| | $882,037,478 | $920,173,255— | $38,135,777 | $810,355,249+ | $71,682,229 |
| **Loans and Securities Other Than Those of Canadian Government** | | | | | |
| Pub. Sec. | $149,278,157 | $149,598,740— | $320,583 | $123,925,013+ | $25,353,144 |
| Rly. Sec. | 60,488,864 | 61,602,560— | 1,113,696 | 44,455,506+ | 16,033,358 |
| Can. Call Loans | 114,148,522 | 128,198,184— | 14,049,662 | 107,113,769+ | 7,034,753 |
| Current | 910,697,141 | 938,711,730— | 28,014,589 | 999,377,600— | 88,680,459 |
| Loans Abd. | 202,950,538 | 184,575,762+ | 18,374,776 | 177,367,068+ | 25,583,470 |
| Prov. Loans | 18,281,244 | 22,290,784— | 4,009,540 | 15,165,661+ | 3,115,583 |
| Municipal | 55,700,479 | 50,137,209+ | 5,563,270 | 60,077,558— | 4,377,079 |
| | $1,511,544,945 | $1,535,114,969— | $23,570,024 | $1,527,482,175— | $15,937,230 |
| **Other Assets** | | | | | |
| Non-Curr. Loans | $11,191,749 | $10,854,644+ | $337,105 | $15,377,236— | $4,185,487 |
| Real Estate | 8,298,776 | 8,368,592— | 69,816 | 6,743,828+ | 1,554,948 |
| Mortgages | 4,043,826 | 3,880,836+ | 162,990 | 3,966,688+ | 77,138 |
| Premises | 73,135,525 | 72,141,738+ | 993,787 | 70,683,847+ | 2,451,678 |
| Lets. of Cred. | 59,732,919 | 60,760,831— | 1,027,912 | 54,755,663+ | 4,977,256 |
| Loans to Comp. | 5,423,180 | 6,439,608— | 1,016,428 | 9,800,986— | 4,377,806 |
| Other Assets | 3,587,289 | 3,715,934— | 128,645 | 4,082,763— | 495,474 |
| | $165,413,264 | $166,162,183— | $748,919 | $165,411,011+ | $2,253 |
| Total | $2,558,995,687 | $2,621,450,407— | $62,454,720 | $2,503,248,435+ | $55,747,252 |
| Note Circ. Dep. | 6,229,794 | 8,176,087— | 1,946,293 | 6,119,119+ | 110,675 |
| Int. Bk. Bal. | 115,845,839 | 177,849,926— | 62,004,087 | 122,519,735— | 6,673,896 |
| Gross | $2,681,071,320 | $2,807,476,420— | $126,405,100 | $2,631,887,289+ | $49,184,031 |
| **LIABILITIES TO THE PUBLIC** | | | | | |
| **Liability to Government and Circulation** | | | | | |
| Circulation | $155,303,093 | $165,672,143— | $10,369,050 | $156,865,776— | $1,562,683 |
| Dom. Govt. | 17,791,622 | 24,729,724— | 6,938,102 | 34,277,423— | 16,485,801 |
| Prov. Govt. | 26,792,603 | 31,008,131— | 4,215,528 | 43,307,755— | 16,515,152 |
| Govt. Advances | 18,600,000 | 30,400,000— | 11,800,000 | 24,690,500— | 6,090,500 |
| **Deposits by Public** | | | | | |
| Demand Dep. | 502,789,727 | 595,325,125— | 92,535,398 | 516,559,111— | 13,769,384 |
| Savings Dep. | 1,249,622,592 | 1,237,611,267+ | 12,011,325 | 1,184,461,830+ | 65,160,762 |
| Total | $1,752,412,319 | $1,832,936,392— | $80,524,073 | $1,701,020,941+ | $51,391,378 |
| Foreign Dep. | 330,361,684 | 338,519,621— | 8,157,937 | 291,582,267+ | 38,779,417 |
| **Due to Banks Abroad, Etc.** | | | | | |
| U. Kingdom | $10,779,488 | $ 7,244,306+ | 3,535,182 | $ 5,831,223+ | $4,948,265 |
| Foreign | 25,600,152 | 27,280,603— | 1,680,451 | 34,991,442— | 9,391,290 |
| Bills Pay. | 11,583,629 | 11,261,383+ | 322,246 | 7,211,456+ | 4,372,173 |
| Lets. of Cred. | 59,732,919 | 60,760,831— | 1,027,912 | 54,755,663+ | 4,977,256 |
| Other Liab. | 1,981,892 | 1,871,123+ | 110,769 | 2,289,686— | 307,794 |
| Pub. Liab. | 2,410,939,401 | $2,526,684,257— | $115,744,856 | $2,356,824,132+ | $54,115,269 |
| Due Bet. Banks | 13,629,126 | 23,030,215— | 9,401,089 | 10,229,274+ | 3,399,852 |
| **Liability to Shareholders** | | | | | |
| Dividends | $ 1,318,922 | $ 922,646+ | $ 396,276 | $ 1,312,543+ | $ 6,379 |
| Reserve | 122,191,700 | 122,875,000— | 683,300 | 123,775,000— | 1,583,300 |
| Capital | 120,164,660 | 121,909,560— | 1,744,900 | 123,409,190— | 3,244,530 |
| Gross | $2,668,243,809 | $2,795,421,678— | $127,177,869 | $2,615,550,139+ | $52,693,670 |

## What Dominion Has Paid to Assist Provincial Highways

| Period | Prince Edward Island | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba | Saskatchewan | British Columbia | Total |
|---|---|---|---|---|---|---|---|---|---|
| April 1, 1919, to March 31, 1920. | ....... | ....... | ....... | ....... | ....... | ....... | ....... | ....... | [illegible] |
| April 1, 1920, to March 31, 1921. | $ 40,264 | ....... | ....... | $ 56,874 | $ 295,100 | ....... | ....... | $ 86,446 | [illegible] |
| April 1, 1921, to March 31, 1922. | 103,493 | $ 486,412 | $ 438,308 | 483,843 | 1,031,229 | $ 351,740 | $ 193,773 | 367,036 | [illegible] |
| April 1, 1922, to March 31, 1923. | 106,277 | 811,068 | 371,973 | 1,143,879 | 2,047,918 | 165,547 | 544,820 | 662,919 | [illegible] |
| April 1, 1923, to March 31, 1924. | 124,079 | 97,347 | 297,202 | 1,117,065 | 1,377,440 | 557,373 | 360,130 | 135,571 | [illegible] |
| | $374,115 | $1,394,829 | $1,107,479 | $2,801,163 | $4,751,688 | $1,074,660 | $1,098,724 | $1,251,965 | [illegible] |

Alberta finances its own roads programme.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THE RoadKing is a sturdy, economical speed truck that cuts down haulage costs to a minimum.

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Custom-built bodies will be furnished to meet the individual requirements of any line of business.

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*Write for booklet and prices.*

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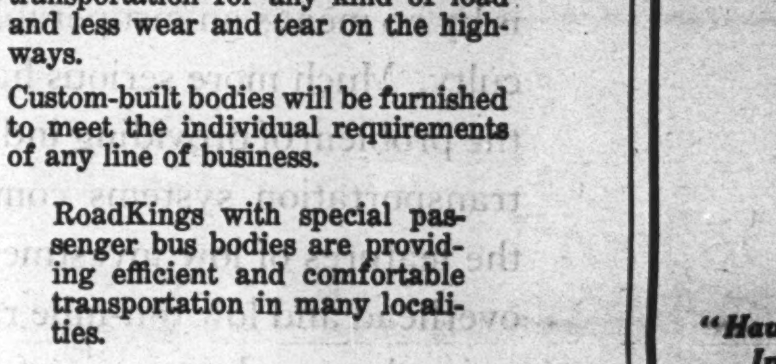
**Leaside (Toronto) Ontario**



*"Haul It Away In A RoadKing"*


# Return of the Chartered Banks of the Dominion of Canada, January 31, 1925

**Made to the Minister of Finance in conformity with Section 112 of the Bank Act, Chapter 32, of the Statutes of 1923**

**LIABILITIES**

| NAME OF BANK | Notes in circulation | Due to Dominion Government | Advances under Finance Act | Due to Provincial Governm'nts | Demand Deposits in Canada | Notice Deposits in Canada | Deposits elsewhere | Bal. due to other Bks. in Canada | Due to Banks in U.K. | Due to Banks elsewhere | Bills Payable |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| Montreal | 40,728,272 | 10,527,961 | ......... | 5,044,372 | 136,889,872 | 363,282,244 | 83,176,032 | 2,944,342 | 82,476 | 902,773 | 214,651 |
| Nova Scotia | 13,415,744 | 994,518 | ......... | 1,625,200 | 26,948,474 | 112,637,976 | 33,842,834 | 3,293,842 | 342,521 | 1,158,132 | 419,089 |
| Toronto | 6,854,957 | 149,445 | ......... | 787,136 | 25,823,206 | 49,214,555 | ......... | 2,188,260 | 67,606 | 989,376 | ......... |
| Provinciale | 3,102,198 | 73,023 | ......... | 105,615 | 3,745,356 | 27,135,645 | ......... | 154 | ......... | 162 | ......... |
| Union | 8,134,510 | 276,410 | ......... | 4,159,420 | 29,472,957 | 52,095,009 | 1,769,962 | 186,140 | 4,884,871 | 581,499 | ......... |
| Commerce | 24,466,565 | 2,680,066 | 8,500,000 | 5,292,446 | 114,693,223 | 204,554,969 | 39,561,458 | 457,101 | 3,351,912 | 8,742,039 | 4,661,074 |
| Royal | 27,146,227 | 1,686,893 | 3,000,000 | 3,891,266 | 85,459,531 | 201,717,195 | 166,842,318 | 1,676,417 | 787,888 | 9,927,957 | 6,235,627 |
| Dominion | 6,454,807 | 308,053 | 4,800,000 | 886,120 | 22,737,379 | 56,338,350 | 3,135,659 | 1,203,617 | 406,401 | 1,017,331 | 50,400 |
| Standard | 5,787,228 | 225,536 | 2,300,000 | 1,581,568 | 16,558,746 | 45,066,525 | ......... | 1,068,207 | 739,327 | 1,535,592 | 2,788 |
| d'Hochelaga | 10,085,794 | 286,439 | ......... | 1,032,835 | 15,797,119 | 74,472,416 | 2,033,421 | 4,984 | 110,243 | 564,400 | ......... |
| Imperial | 8,534,624 | 515,453 | ......... | 2,362,004 | 23,190,458 | 61,393,575 | ......... | 606,062 | 6,243 | 164,104 | ......... |
| Weyburn Security | 592,167 | 67,825 | ......... | 24,621 | 1,473,406 | 1,714,133 | ......... | ......... | ......... | 16,787 | ......... |
| Total | 155,303,093 | 17,791,622 | 18,600,000 | 26,792,603 | 502,789,727 | 1,249,622,592 | 330,361,684 | 13,629,126 | 10,779,488 | 25,600,152 | 11,583,629 |

| NAME OF BANK | Letters of Credit | Other Liabilities | Dividends Declared & unpaid | Reserve Fund | Capital paid up | Total Liabilities | Capital authorized | % last dividend | Loans to Directors | Average gold and coin held | Average Dominion notes held | Greatest amount notes in cir. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ | $ | $ | % | $ | $ | $ | $ |
| Montreal | 9,370,801 | 800,616 | 884,684 | 29,916,700 | 29,916,700 | 714,682,501 | 31,175,000 | 12 | 3,079,095 | 14,880,626 | 82,675,523 | [illegible] |
| Nova Scotia | 4,994,818 | 113,470 | 15,212 | 19,500,000 | 10,000,000 | 229,301,837 | 15,000,000 | 16 | 1,353,865 | 9,486,595 | 12,981,007 | [illegible] |
| Toronto | 1,463,694 | 141,110 | 2,246 | 6,000,000 | 5,000,000 | 98,681,595 | 10,000,000 | 12 | 522,569 | 985,606 | 6,005,623 | [illegible] |
| Provinciale | ......... | 52,926 | 4,229 | 1,500,000 | 3,000,000 | 38,719,312 | 5,000,000 | 9 | ......... | 180,447 | 320,375 | [illegible] |
| Union | 4,187,077 | 1,705 | 6,165 | 1,750,000 | 8,000,000 | 115,505,730 | 15,000,000 | 8 | 836,656 | 1,127,239 | 6,879,653 | [illegible] |
| Commerce | 9,277,203 | ......... | 9,380 | 20,000,000 | 20,000,000 | 466,247,440 | 25,000,000 | 12 | 4,897,237 | 15,679,000 | 13,078,000 | [illegible] |
| Royal | 26,521,628 | ......... | 18,165 | 20,400,000 | 20,400,000 | 575,711,117 | 25,000,000 | 12 | 1,184,473 | 10,204,102 | 18,644,975 | [illegible] |
| Dominion | 2,054,925 | 509,043 | 3,732 | 7,000,000 | 6,000,000 | 112,905,821 | 10,000,000 | 12 | 977,648 | 2,170,000 | 4,411,000 | [illegible] |
| Standard | 311,200 | 319,601 | 145,825 | 2,900,000 | 4,823,400 | 83,365,550 | 5,000,000 | 12 | 580,582 | 1,021,299 | 4,125,835 | [illegible] |
| d'Hochelaga | 1,038,120 | ......... | 2,759 | 5,500,000 | 5,500,000 | 116,428,535 | 10,000,000 | 10 | 155,807 | 924,326 | 2,996,744 | [illegible] |
| Imperial | 513,453 | ......... | 213,207 | 7,500,000 | 7,000,000 | 111,999,188 | 10,000,000 | 12 | 185,887 | 2,112,701 | 8,162,834 | [illegible] |
| Weyburn Security | ......... | 43,363 | 13,318 | 225,000 | 524,560 | 4,695,183 | 1,000,000 | 5 | 61,883 | 19,381 | 52,844 | [illegible] |
| Total | 59,732,919 | 1,981,834 | 1,318,922 | 122,191,700 | 120,164,660 | 2,668,243,809 | 162,175,000 | ..... | 13,835,702 | 58,791,322 | 160,334,413 | [illegible] |

**ASSETS**

| NAME OF BANK | Current Gold and Subsidiary Coin | Dominion Notes | Notes of other banks | United States and other foreign currencies | Cheques on other banks | Balances due from banks in Canada | Due from banks elsewhere | Government securities | Canadian municipal British and foreign Securities | Railway and other bonds and stocks | Call loans in Canada | Call loans elsewhere |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| Montreal* | 17,004,544 | 70,118,037 | 3,199,860 | 549,650 | 18,939,014 | ......... | 12,474,076 | 85,630,755 | 47,735,701 | 6,580,681 | 8,628,990 | 129,789,641 |
| Nova Scotia | 9,445,761 | 12,530,338 | 807,780 | 1,910,975 | 8,697,215 | 100 | 2,837,352 | 27,629,956 | 11,534,836 | 13,080,146 | 11,338,524 | 15,780,993 |
| Toronto | 979,332 | 5,452,665 | 417,015 | 73,153 | 5,632,068 | 102 | 1,189,521 | 16,777,251 | 8,131,416 | 3,064,639 | 7,370,841 | ......... |
| Provinciale | 172,272 | 309,309 | 466,190 | 32,523 | 1,102,772 | 3,347,891 | 166,395 | 4,594,250 | 1,314,705 | 2,217,745 | 6,263,956 | ......... |
| Union | 1,139,490 | 6,668,332 | 646,350 | 72,636 | 3,012,460 | 79,312 | 1,662,500 | 15,431,263 | 8,226,373 | 3,085,630 | 14,259,302 | 711,599 |
| Commerce | 10,108,941 | 15,078,112 | 1,893,030 | 1,810,219 | 17,841,592 | 1,758 | 13,647,162 | 59,713,840 | 23,978,017 | 8,195,479 | 26,399,058 | 17,143,957 |
| Royal† | 11,782,443 | 23,273,335 | 2,948,764 | 21,489,430 | 25,238,225 | | 21,378,152 | 61,297,374 | 28,686,986 | 19,733,879 | 18,153,497 | 34,803,798 |
| Dominion | 2,182,097 | 5,026,741 | 888,520 | 135,790 | 5,029,788 | 678 | 1,652,261 | 14,042,475 | 5,446,610 | 2,054,017 | 5,242,031 | 3,676,803 |
| Standard | 1,041,735 | 8,527,541 | 523,927 | 41,826 | 2,859,217 | 100,000 | 1,101,037 | 14,382,293 | 3,148,197 | 450,475 | 6,469,330 | 300,000 |
| d'Hochelaga x | 991,133 | 3,137,337 | 1,106,385 | 142,388 | 3,629,889 | 801,729 | 1,263,041 | 18,531,869 | 5,757,715 | 1,637,151 | 5,518,105 | ......... |
| Imperial | 2,114,677 | 8,561,891 | 827,730 | 114,722 | 4,224,778 | 686,248 | 1,436,384 | 14,097,369 | 5,308,287 | 297,272 | 4,254,888 | 2,750,000 |
| Weyburn Security | 19,165 | 50,669 | 19,235 | 1,211 | 9,458 | 866,859 | 51,627 | 359,131 | 9,314 | 91,750 | 250,000 | ......... |
| Total | 56,981,590 | 158,724,307 | 13,744,586 | 26,374,523 | 96,216,576 | 5,884,677 | 58,859,508 | 332,487,826 | 149,278,157 | 60,488,864 | 114,148,522 | 204,956,791 |

| NAME OF BANK | Other current loans in Canada | Other current loans elsewhere | Loans to Municipalities and to provinces | Non-current loans | Real estate other than premises | Mortgages on real estate | Bank premises | Letters of Credit | Deposit for note circulation | In central gold reserves** | Shares of and loans to controlled companies | Other assets | Total Assets |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| Montreal* | 213,101,442 | 36,535,391 | 18,485,328 | 2,795,121 | 994,317 | 1,201,666 | 12,650,000 | 9,370,801 | 1,557,241 | 16,000,000 | 1,581,390 | 784,741 | 715,708,397 |
| Nova Scotia | 74,295,884 | 16,844,006 | 3,820,722 | 616,621 | 90,471 | 106,315 | 7,847,926 | 4,994,818 | 489,529 | 5,250,000 | ......... | 155,302 | 230,105,581 |
| Toronto | 42,283,390 | ......... | 1,786,773 | 234,751 | ......... | 51,199 | 3,374,385 | 1,463,694 | 255,033 | 2,000,000 | ......... | ......... | 100,537,236 |
| Provinciale | 14,860,720 | ......... | 1,648,930 | 176,490 | 150,699 | 69,851 | 1,515,734 | ......... | 158,750 | ......... | ......... | 230,700 | 38,799,890 |
| Union | 44,921,857 | 2,456,530 | 2,584,883 | 1,176,971 | 556,580 | 374,407 | 2,160,771 | 4,187,077 | 420,000 | ......... | ......... | 1,352 | 115,975,385 |
| Commerce | 190,300,046 | 27,554,127 | 22,171,178 | 2,361,313 | 2,229,019 | 706,884 | 11,835,940 | 9,277,203 | 1,000,000 | 4,000,000 | 2,149,300 | 566,474 | 469,372,349 |
| Royal† | 131,255,368 | 117,203,984 | 8,029,601 | 2,002,506 | 1,683,553 | 428,034 | 13,488,631 | 26,521,628 | 1,020,000 | 7,000,000 | 1,558,989 | 491,031 | 578,043,732 |
| Dominion | 56,914,708 | 1,516,976 | 708,056 | 386,410 | 89,537 | 20,758 | 6,040,865 | 2,054,925 | 324,000 | 200,000 | 133,501 | 408,952 | 114,042,808 |
| Standard | 36,077,030 | ......... | 1,798,201 | 741,699 | 275,323 | 166,355 | 3,752,051 | 311,200 | 273,000 | 1,100,000 | ......... | 80,375 | 83,520,820 |
| d'Hochelaga x | 54,582,853 | 942 | 6,454,468 | 240,042 | 1,593,773 | 482,965 | 5,156,876 | 1,038,120 | 361,708 | 4,500,000 | ......... | 174,876 | 117,103,377 |
| Imperial | 50,010,714 | 838,582 | 6,472,151 | 346,852 | 475,739 | 359,016 | 5,076,673 | 513,453 | 345,552 | 3,502,533 | ......... | 619,562 | 113,235,186 |
| Weyburn Security | 2,093,129 | ......... | 21,432 | 112,973 | 159,765 | 76,376 | 235,673 | ......... | 24,981 | 100,000 | ......... | 72,804 | 4,626,559 |
| Total | 910,697,141 | 202,950,538 | 73,981,723 | 11,191,749 | 8,298,776 | 4,043,826 | 73,135,525 | 59,732,919 | 6,229,794 | 43,652,533 | 5,423,180 | 3,587,169 | 2,681,071,320 |

**Of this deposit $7,002,533 is in gold coin; the balance is in Dominion notes.

*The business of the branches of the bank in Paris, France, and in San Francisco, U.S.A., is carried on under the name of local incorporated companies in compliance with legal requirements of the respective countries, and the figures are incorporated in the above-mentioned general statement.—Footnote to Bank of Montreal return.

†The Royal Bank of Canada (France) has been incorporated under the laws of France to conduct the business of the bank in Paris. As the entire capital stock of the Royal Bank of Canada (France) is owned by the Royal Bank of Canada, the assets and liabilities of the former are included in the above return.—Footnote to Royal Bank return.

xThe assets and liabilities of the Banque Canadienne Nationale, France, same being considered a branch operating as a subsidiary of the Banque d'Hochelaga are included in above return.—Footnote to Banque d'Hochelaga return.

DEPARTMENT OF FINANCE, OTTAWA, March 11, 1925.